KansasFest/A24eVR schedule

All times expressed in Central Daylight Time (Kansas City time) (UTC-5)

Saturday, July 29, 2023

9:00 AM **Welcome**
> Committee [1]

9:15 AM **Intro to ///**
> Hagstrom [2]

9:30 AM **What is the Apple IIGS Launcher**
> Lee [3]

10:00 AM break

10:15 AM **Making the Apple IIc a True Portable Computer**
> Briel* [4]

10:45 AM **Game Development in Double Lores Graphics**
> Golombeck [5]

11:15 AM break

11:30 AM **Using the BlueSCSI to backup your disk on Apple II and Macintosh**
> Graham* [6]

12:00 PM **Digital Eclipse: Telling Computer Game History Through Interactive Documentaries**
> Kohler [7]

12:30 PM "lunch" break (1 hr)

1:30 PM **Apple /// History**
> Sander [8]

2:15 PM **Copy protection via the Game I/O connector**
> Charlesworth [9]

2:30 PM break

2:45 PM **The Successful Failure: How The Apple /// Kickstarted My 8-bit Business**
> Strosnider* [10]

3:15 PM **Apple2TS**
> Torrence* [11]

3:45 PM break

4:00 PM **On Three**
> Consorti [12]

4:45 PM **Q&A: Apple2Disk Device**
> Giacchi** [13]

5:00 PM break

5:15 PM **Apple IIc Enhanced EPROM Chip**
> Buggie* [14]

5:45 PM **Life as an Apple II Nomad**
> Gagne* [15]

6:15 PM **Day 1 wrap-up**
> Committee [16]

Sunday, July 30, 2023

	Welcome
	Committee [17]
9:15 AM	**The Apple /// and Fujinet**
	Justice [18]
9:45 AM	**Production of new old stock Floppy Disks for the Apple II**
	Golombeck [19]
10:00 AM	break
10:15 AM	**A.P.P.L.E.'s Blast From the Past**
	Wiser, Martens [20]
10:45 AM	**Q&A: What is the UltimateDrive?**
	Allison, Martino** [21]
10:55 AM	**Q&A: Peripheral cards with the Raspberry Pi Pico**
	Schmidt** [22]
11:05 AM	**Q&A: VidHD-style HDMI solution with Ethernet-out bus card to Pi**
	Flanagan** [23]
11:15 AM	break
11:30 AM	**][+][=][+][**
	Yuhasz* [24]
12:00 PM	**What's New in ORCA/C**
	Heumann [25]
12:30 PM	"lunch" break (1 hr)
1:30 PM	**Apple ///: The machine that would not die**
	Ottalini [26]
2:00 PM	**Physics engine via the Apple IIC Serial Port**
	Ayres-Griffiths, Ayres-Griffiths [27]
2:30 PM	break
2:45 PM	**Q&A: Porting a classic game to a classic computer**
	Scharenbroich** [28]
2:55 PM	**Q&A: Nox Archaist - Analysis of Lord British Cow Bug**
	Lemmert** [29]
3:05 PM	**Q&A: Versatile Serial Accelerator**
	Kobchenko** [30]
3:15 PM	**Q&A: Recreating vintage parts with Tinkercad**
	Rivera** [31]
3:30 PM	break
3:45 PM	**Enhancing an 8 bit classic game with the Ensoniq chip**
	Craft* [32]
4:15 PM	**The history and reboot of A2Central.com**
	Gagne, Shepherd [33]
4:45 PM	break
5:00 PM	**Apple /// arcade: vertical scrollers**

Hagstrom [34]

5:30 PM **The wild ride of the Apple /// Uni/Duo File Controller**

Puskarich [35]

6:00 PM **Apple II Forever awards**

Committee [36]

6:15 PM **Event wrap-up**

Committee [37]

* Recorded in Kansas City July 18-23, played here, followed by virtual Q&A session

** Recorded in Kansas City, July 18-23, video to be made available online in advance

[1] Welcome
Sat 9:00am KFest/A24eVR committee

Opening remarks

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[2] Intro to ///
Sat 9:15 Hagstrom

In honor of our Apple /// theme this year, Paul Hagstrom walks through a brief introduction to the highlights of the Apple /// story. Its design, its urban legends, and its dedicated community well beyond the years Apple supported it.

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[3] What is the Apple IIGS Launcher
Sat 9:30am Lee

Ever thought something like Total Replay would be cool for IIGS specific games? Find out more during this presentation.

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[4] Making the Apple IIc a True Portable Computer
Sat 10:15am Briel

In 2022 a good friend gifted me a Apple IIc computer with the bag and power supply. By the end of Kfest I had realized that even with all of the popularity of the Apple IIc, there was never a true portable kit made that gave it all the features of a modern laptop.

I ventured out to create a open source project that utilized hacking current components like LCD screen and battery packs to make a portable Apple IIc that met the following requirements:

1. Attaches to the Apple IIc without any drilling, gluing or any other non-reversable damage.
2. Fits within the Factory Apple IIc caring case.
3. Allows more room in the carrying case for extras like mouse, joystick, and floppyemu
4. Runs completely unplugged for at least 2 hours
5. Still able to freely open and use the carrying handle and use as prop fully open
6. Uses easy to source parts
7. Provide common Github
8. Make it open source for everyone to enjoy, create, modify and improve.

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[5] Game Development in Double Lores Graphics
Sat 10:45am Golombeck

Double Lores graphics on capable Apple //e and above is yet not very widely used for developing games. 8-Bit-Shack as a small software developing house has specialized in creating new games based on Double Lores graphics. This presentation will give a deeper insight into how games like the recently published "Angry Birds", "The Pudding strikes Back" or "Witch Trial" have been coded regarding the efficient use of Double Lores graphics including screen scrolling techniques and a software sprite engine in order to bring

arcade graphics in 80 x 48 pixels on these machines.

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[6] Using the BlueSCSI to backup your disk on Apple II and Macintosh
Sat 11:30am Graham

This session will demonstrate how to use Eric Helgerson's and Androda's BlueSCSI device to backup aging spinning disks on the Apple II and Macintosh computers.

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[7] Digital Eclipse: Telling Computer Game History Through Interactive Documentaries
Sat 12:00pm Kohler

Chris will demo a new "interactive documentary" game from Digital Eclipse, which tells the story of one of the Apple II's most groundbreaking, influential games through a combination of video, gameplay, audio, archival materials, and more.

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[8] Apple /// History
Sat 1:30pm Sander

Wendell Sander, father of the Apple ///, presents a brief overview of his history as designer of the Apple ///, followed by a question & answer session moderated by Dave Ottalini.

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[9] Copy protection via the Game I/O connector
Sat 2:15pm Charlesworth

Tom has been intrigued by copy protection dongles in recent years!
In this session he'll talk about a handful of these rare components - from their purpose to reverse engineering them so that he can add them to the open-source AppleWin emulation project.

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[10] The Successful Failure: How The Apple /// Kickstarted My 8-bit Business
Sat 2:45pm Strosnider

Join Joe on a historical journey of discovery, rejection and resurrection: hear how Apple's biggest failure ended up being one of Joe's biggest success stories.

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[11] Apple2TS
Sat 2:00pm Torrence

Last year, while looking for new content for my YouTube channel, I decided to try writing an Apple II Emulator using TypeScript and React. This turned into a year-long project that became not just a learning exercise for myself, but also a chance for others in the Apple II community to gather and trade ideas. In my talk, I'll describe the architecture of the emulator, some of the vexing graphics, sound, and floppy drive problems that the community helped me solve, and my future plans.

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[12] On Three
Sat 4:00pm Consorti

Bob Consorti will discuss On Three

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[13] Apple2Disk Device
Sat 4:45pm Giacchi
(Q&A only, video available before the virtual event)

Thomas Giacchi will talk about his new Apple2Disk device. He will go into how the DISK2 controller works. How bits are written and read from disk. How copy protection works. How weak bits work as a protection and why , if Apple had done a little change to the prom on the controller, weak bits wouldn't exist, and they could have stored 20 sectors per track instead of 16!. Then he'll talk about how the flux-copier overcomes all these things and how the emulator works. He'll demo it in action.

[14] Apple IIc Enhanced EPROM Chip
Sat 5:15pm Buggie

Enhanced firmware for this IIc Eprom includes: The checkerboard power-on self-test, a capability for the IIc to operate a 3.5" Unidisk 800k floppy drive, and a capability to operate a 32 meg single-partition hard drive. Firmware in the Apple IIc is stored in the 27C256 28-pin DIP chip. This Eprom was introduced in the late 1970s, and it is still available as new/unused even today. Attenders will be shown how old firmware code can be erased multiple times with UV ultraviolet lighjt projected through its round clear quartz window. Specialized Eprom hardware will be shown and explained: The 'Super Eprom Burner," an Apple IIe standard interface card from the mid-1980s, which can hold a blank DIP Eprom chip with either 24 or 28 pins, so that fresh firmware from a floppy disk can be written onto the blank Eprom. Hidden features from the Eprom chip can be altered, such as the opening top screen message during power-on. My large device for testing or duplicatingh Eprom chips will be displayed: the GANG-PRO-8, made in USA by Logical Devices Inc. It can duplicate up to eight copies of a master Eprom chip, each time with perfect results. The presentation will also introduce and explain how SECTOR-EDITING, covered in the Copy II Plus disk and handbook, is used to modify and customize software details such as text-headings on disks.

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[15] Life as an Apple II Nomad
Sat 4:00pm Gagne

At KansasFest 2019, Ken was given the opportunity to leave his home state of 40 years and set out on a neverending journey around the globe. For the last four years, he's traversed America, Australia, and Europe, meeting Apple II users and personally delivering Juiced.GS magazines. Come hear about the connections and discoveries he's made and how the Apple II community has been an inextricable component of his life as a digital nomad.

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[16] Day 1 wrap-up
Sat 6:15pm Committee

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sleep, maybe?
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[17] Welcome to Day 2
Sun 9:00am Committee

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[18] The Apple /// and Fujinet
Sun 9:15am Justice

A run through using the Fujinet with the Apple ///. What do you need to connect it to the ///. A look at the Fujinet SOS driver to support it. And a demo of how well the Apple /// Applications and OS design work with the Fujinet.

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[19] Production of new old stock Floppy Disks for the Apple II
Sun 9:45am Golombeck

8-Bit-Shack is a new software house that publishes new and old software on floppy disk. We have set up a small floppy production for 3.5" and 5.25" floppy disks in order to release new titles on floppy disk. With the help of our graphic designer we design custom floppy labels and disk sleeves which are then printed and assembled in a manufactory process. Together with a printed color manual the disks are shipped in a classic ZipLoc bag to you. Our catalogue contains titles we programmed with our own software development team as well as titles from other authors that like to publish with us. Floppy production is done on a demand base and special requests can also be fulfilled. We can also reproduce any DSK-image for you on floppy or even publish a small series of your own software production on floppy disk. The presentation will give an overview about our manufacturing process and what we already have produced.

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[20] A.P.P.L.E.'s Blast From the Past
Sun 10:15am Wiser, Martens

Join Brian Wiser and Bill Martens for highlights of new A.P.P.LE. software and books that we've produced, along with some special announcements and surprises! As the oldest official Apple user group from 1978, and being a resource for current news, we've created a variety of Web sites (like MECC, Beagle Bros, Applied Engineering, Apple Archives), over 50 previous books, dozens of programs, and a PDF magazine that's usually 50+ pages. Stay tuned for more!

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[21] What is the UltimateDrive?
Sun 10:45am Allison, Martino
(Q&A only, video available before the virtual event)

What is the UltimateDrive by UltimateApple2??

Well, it's the answer your every need in software storage and communication across all flavors of the Apple II.

All details will be provided at the session.

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[22] Peripheral cards with the Raspberry Pi Pico
Sun 10:55am Schmidt
(Q&A only, video available before the virtual event)

Since last year's KansasFest, several Apple II peripheral cards based on the RPi Pico have been unveiled. Oliver will first explain what makes the RPi Pico so interesting for this purpose. He then compares several of these cards and points out the differences and similarities. Finally, Oliver will focus on "A2retroNET", the RPi Pico-based card that he himself helped to create. He has brought a prototype that will be shown in a live demo.

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[23] VidHD-style HDMI solution with Ethernet-out bus card to Pi
Sun 11:05am Flanagan
(Q&A only, video available before the virtual event)

John Flanagan (with development assistance from Henri Asseily) will demonstrate a new HDMI output system for the Apple //e, similar to the VidHD which is currently very difficult to obtain. John's design splits the internal bus card (powered by a simple Pico-based solution with integrated W5500 10/100 Ethernet) from the external graphics processor (a Raspberry Pi or even a laptop/desktop running a connecting service), allowing for a cheaper, expandable open system, using easily obtainable off-the-shelf parts. John will demonstrate how this system can not only provide a cheap HDMI output option for the Apple //e, on par with the VidHD, but also provide new graphics capabilities and other features.

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[24]][+][=][+][
Sun 11:30am Yuhasz

A Powerpoint presentation on how I acquired an Apple][+ with a Rev 03 motherboard (older than what is in many Apple]['s) and a Datanetics Keyboard and turned it into a WORKING Apple][for less than $500 (this includes my attempt to re-create the RPL-raised power light without the built in "Raise" and change the lid label). Working original Apple]['s are going for $1000 or more on eBay, especially in excellent cosmetic condition. This session will attempt to discount the mythology that an Apple][+ with Integer ROMs is some how significantly less than an Apple][in terms of experience and functionality without paying the original "Apple][tax" (while adding the original Apple][cosmetics).

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[25] What's New in ORCA/C
Sun 12:00pm Heumann

Stephen Heumann will describe what's new in ORCA/C, the C compiler for the Apple IIGS. Recent versions of ORCA/C have added many new features, including language and library features from newer versions of the C standard and new error-checking features to help detect problems in your code. This presentation will describe these new features and give examples of how you can take advantage of them when programming the IIGS. There will also be a brief discussion of future plans for ORCA/C.

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[26] Apple ///: The machine that would not die
Sun 1:30pm Ottalini

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[27] Physics engine via the Apple IIC Serial Port
Sat 3:15pm Ayres-Griffiths, Ayres-Griffiths

Melody got the crazy idea of connecting an Apple IIC to a physics engine running on another device over a serial (LOL) connection and using it to make some Apple II games / demos (in Applesoft BASIC, even!) and talked April into making it happen -- did it work out? Is this thing practical, or what? Let's find out!

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[28] Porting a classic game to a classic computer
Sun 2:50pm Scharenbroich
(Q&A only, video available before the virtual event)

Lucas Scharenbroich will discuss his recent work developing a software implementation of the Nintendo Entertainment System (NES) PPU and APU hardware interface that allows NES ROMs to run on the Apple IIgs with minimal modifications. The talk will cover the design and implementation of the APU emulation, leveraging his Generic Tile Engine as the PPU graphics backend, and ROM code changes. A demo of the Super Mario Bros ROM running with full graphics and sound will be shown.

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[29] Nox Archaist - Analysis of Lord British Cow Bug
Sun 3:00pm Lemmert
(Q&A only, video available before the virtual event)

Earlier this year it was discovered that casting the Cowmageddon spell three times in Nox Archaist causes Lord British to transform into a cow. His Cowship is still invincible but loses interest in combat and mostly just eats grass.

In this session Mark Lemmert will dive into the assembly code of Nox Archaist to explore the cause of the bug and how to fix it.

And, there might be a new 6502 Workshop project announced too!

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[30] Versatile Serial Accelerator
Sun 3:10pm Kobchenko
(Q&A only, video available before the virtual event)

Oleg Kobchenko will discuss and demo an original multi-purpose Serial Accelerator for Apple II with a wide variety of computational, graphics, media, communications and storage features. Serial interface rather than an expansion board provides convenience and compatibility with all Apple II versions, especially with the portable IIc and IIc Plus. Unlike direct CPU acceleration, which changes the characteristics of the whole computer and works on CPU instructions level, the Serial Accelerator focuses on specific high-level computation-intensive and media handling tasks. The Accelerator uses specific high-performance binary protocol, which can be expanded and customized for various types of tasks. It can be accessed with an MLI interface or extensions to AppleSoft and libraries to other languages such as Kyan Pascal or PLASMA. The

demo will show math-intensive graphics such as Mandelbrot fractal yet offering interactive experience, as well as examples of streaming animation.

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[31] Recreating vintage parts with Tinkercad
Sun 3:20pm Rivera
(Q&A only, video available before the virtual event)

A Tinkercad session for vintage computer parts would likely begin with an overview of the specific parts being modeled and the overall goal of the session. This might include a brief history of the parts, their function in older computers, and any technical specifications or requirements for the models.

Next, the session would focus on the basics of Tinkercad, including its interface and tools. Participants would learn how to navigate the platform, create basic shapes and objects, and manipulate them to fit their designs.

Once participants have a grasp of the basics, the session would move on to the specifics of modeling vintage computer parts. This might include techniques for creating detailed circuit boards, recreating unique keycaps, or designing housing or brackets for specific parts. The instructor would guide participants through the process, offering tips and feedback to help them create accurate and detailed models.

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[32] Enhancing an 8 bit classic game with the Ensoniq chip
Sun 3:45pm Craft

There are a cherished set of 8 bit Apple II games that feature Mockingboard support for improved sound. But the most common sound chip in an Apple II series computer is the Ensoniq chip in the IIGS. What if a classic 8 bit game were updated to take advantage of the Ensoniq chip? Jay Craft explores this idea with a classic Apple II game from 1982. He will discuss the overall method involved, and ideas where it could be used to enhance other games.

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[33] The history and reboot of A2Central.com
Sun 4:15pm Gagne, Shepherd

In 2000, Eric "Sheppy" Shepherd launched A2Central.com, a definitive source of news, software, support, and camaraderie for the entire Apple II community. Over the next two decades, it underwent many transformations and editors before going offline in 2022 — but now, A2Central.com is back and under the management of Juiced.GS. Its first and latest owners, Sheppy and Ken Gagne, team up to deliver this behind-the-scenes look at the history and reboot of "your total source for Apple II computing".

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[34] Apple /// arcade: vertical scrollers
Sun 5:00pm Hagstrom

The Apple /// has a "smooth scrolling" capability that can dramatically increase performance for games featuring vertical motion. Paul Hagstrom will walk through the design and creation of a simple game or two making use of this feature, to showcase the potential of the Apple /// as an interesting retro gaming target

platform. (This follows up on the 2022 presentation on making an Apple /// arcade game; but this year, the focus will be more on the step-by-step implementation of a simpler game. The aim is to provide inspiration and a starting point for others who want to write their own, surely much cooler games. Code will be 6502 assembly, and topics will include: getting it on a bootable disk, banked memory, smooth scrolling, sound effects, blanking interrupts, and the mind-melting Apple /// hi-res mode. Time and timings will be tight.)

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[35] The wild ride of the Apple /// Uni/Duo File Controller
Sun 5:30pm Puskarich

Have you ever wondered if you could hook A Lisa Twiggy drive to your Apple ///? Have you ever heard of an external Twiggy drive? Petar Puskarich will discuss the discovery, experimentation, loss and recovery of the earliest known Apple /// Twiggy drive controller and how it almost was lost twice to history.

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[36] Apple II Forever awards
Sun 6:00pm Committee

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[37] KansasFest/A24eVR wrap-up
Sun 6:15pm Committee

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KansasFest schedule (original version)

All times expressed in Central Daylight Time (Kansas City time) (UTC-5)

Thursday 20 July 2023

9:00 AM	**Welcome**
	Committee
9:15 AM	**Intro to ///**
	Hagstrom [1]
9:45 AM	**The Successful Failure: How The Apple /// Kickstarted My 8-bit Business**
	Strosnider [2]
10:15 AM	**Interactive Fiction : What if the Twiggy had worked?**
	Rupnik [3]
11:00 AM	**break**
11:15 AM	**What is the UltimateDrive?**
	Allison/Martino [4]
12:00 PM	**lunch**
1:30 PM	**Peripheral cards with the Raspberry Pi Pico**
	Schmidt [5]
2:30 PM	**break**
2:45 PM	**VidHD-style HDMI solution with Ethernet-out bus card to Pi**
	Flanagan [6]
3:30 PM	**break**
3:45 PM	**Yet Another Video Converter with Tang Nano 9K FPGA**
	Kim [7]
4:15 PM	**Making the Apple IIc a True Portable Computer**
	Briel [8]
5:30 PM	**dinner**

Friday 21 July 2023

9:30 AM	**Apple2TS**
	Torrence [9]
10:15 AM	**Nox Archaist - Analysis of Lord British Cow Bug**
	Lemmert [10]
11:00 AM	**break**
11:15 AM	**Life as an Apple II Nomad**
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12:00 PM	**lunch**
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Yuhasz [12]

2:00 PM **Using the BlueSCSI to backup your disk on Apple II and Macintosh**

Graham [13]

2:30 PM **break**

2:45 PM **Marat][on Round //** Part 1

LadyAiluros

3:45 PM **break**

4:00 PM **Marat][on Round //** Part 2

LadyAiluros

5:30 PM **pizza**

6:00 PM **Awards**

Saturday 22 July 2023

9:30 AM **Apple IIc Enhanced EPROM Chip**

Buggie [14]

10:15 AM **Recreating vintage parts with Tinkercad**

 [15]

11:00 AM **break**

11:15 AM **Versatile Serial Accelerator**

Kobchenko [16]

12:00 PM **lunch**

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2:00 PM **Porting a classic game to a classic computer**

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2:45 PM **break**

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3:30 AM **The Tony Diaz and Roger Wagner collections**

Committee [20]

4:00 AM **Prizes**

Committee

5:30 PM **dinner**

[1] Hagstrom - Intro to ///

In honor of our Apple /// theme this year, Paul Hagstrom walks through a brief introduction to the highlights of the Apple /// story. Its design, its urban legends, and its dedicated community well beyond the years Apple supported it.

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[2] Strosnider - The Successful Failure: How The Apple /// Kickstarted My 8-bit Business

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[3] Rupnik - An Interactive Fiction session with audience participation to guide the conversation. We will be travelling the hypothetic path that would have occurred if the Twiggy Drive - as released by apple on its original schedule - would have worked. Talk will include the history of the twiggy drive presented in a fun and entertaining manner - along with rare photos and even twiggy floppy disks at KansasFest!

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[4] Allison/Martino - What is the UltimateDrive by UltimateApple2??

Well, it's the answer your every need in software storage and communication across all flavors of the Apple II.

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[5] Schmidt - Peripheral cards with the Raspberry Pi Pico

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[7] Kim - Yet Another Video Converter with Tang Nano 9K FPGA

Rob Kim's project with Tang Nano 9K FPGA to make a scan doubling video interface for the Apple IIc/(IIe?) to VGA & HDMI*(ish).

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[8] Briel - Making the Apple IIc a True Portable Computer

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[9] Torrence - Apple2TS

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[10] Lemmert - Nox Archaist - Analysis of Lord British Cow Bug

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[12]][+][=][+][
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[14] Buggie - Apple IIc Enhanced EPROM Chip

Enhanced firmware for this IIc Eprom includes: The checkerboard power-on self-test, a capability for the IIc to operate a 3.5" Unidisk 800k floppy drive, and a capability to operate a 32 meg single-partition hard drive. Firmware in the Apple IIc is stored in the 27C256 28-pin DIP chip. This Eprom was introduced in the late 1970s, and it is still available as new/unused even today. Attenders will be shown how old firmware code can be erased multiple times with UV ultraviolet lighjt projected through its round clear quartz window. Specialized Eprom hardware will be shown and explained: The 'Super Eprom Burner," an Apple IIe standard interface card from the mid-1980s, which can hold a blank DIP Eprom chip with either 24 or 28 pins, so that fresh firmware from a floppy disk can be written onto the blank Eprom. Hidden features from the Eprom chip can be altered, such as the opening top screen message during power-on. My large device for testing or duplicatingh Eprom chips will be displayed: the GANG-PRO-8, made in USA by Logical Devices Inc. It can duplicate up to eight copies of a master Eprom chip, each time with perfect results. The presentation will also introduce and explain how SECTOR-EDITING, covered in the Copy II Plus disk and handbook, is used to modify and customize software details such as text-headings on disks.

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[15] Rivera - Recreating vintage parts with Tinkercad

A Tinkercad session for vintage computer parts would likely begin with an overview of the specific parts being modeled and the overall goal of the session. This might include a brief history of the parts, their function in older computers, and any technical specifications or requirements for the models.

Next, the session would focus on the basics of Tinkercad, including its interface and tools. Participants would learn how to navigate the platform, create basic shapes and objects, and manipulate them to fit their designs.

Once participants have a grasp of the basics, the session would move on to the specifics of modeling vintage computer parts. This might include techniques for creating detailed circuit boards, recreating unique keycaps, or designing housing or brackets for specific parts. The instructor would guide participants through the process, offering tips and feedback to help them create accurate and detailed models.

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[16] Kobchenko - Versatile Serial Accelerator

Oleg Kobchenko will discuss and demo an original multi-purpose Serial Accelerator for Apple II with a wide variety of computational, graphics, media, communications and storage features. Serial interface rather than an expansion board provides convenience and compatibility with all Apple II versions, especially with the portable IIc and IIc Plus. Unlike direct CPU acceleration, which changes the characteristics of the whole computer and works on CPU instructions level, the Serial Accelerator focuses on specific high-level computation-intensive and media handling tasks. The Accelerator uses specific high-performance binary protocol, which can be expanded and customized for various types of tasks. It can be accessed with an MLI interface or extensions to AppleSoft and libraries to other languages such as Kyan Pascal or PLASMA. The demo will show math-intensive graphics such as Mandelbrot fractal yet offering interactive experience, as well as examples of streaming animation.

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[17] Craft - Enhancing an 8 bit classic game with the Ensoniq chip

There are a cherished set of 8 bit Apple II games that feature Mockingboard support for improved sound. But the most common sound chip in an Apple II series computer is the Ensoniq chip in the IIGS. What if a classic 8 bit game were updated to take advantage of the Ensoniq chip? Jay Craft explores this idea with a classic Apple II game from 1982. He will discuss the overall method involved, and ideas where it could be used to enhance other games.

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[18] Scharenbroich - Porting a classic game to a classic computer

Lucas Scharenbroich will discuss his recent work developing a software implementation of the Nintendo Entertainment System (NES) PPU and APU hardware interface that allows NES ROMs to run on the Apple IIgs with minimal modifications. The talk will cover the design and implementation of the APU emulation, leveraging his Generic Tile Engine as the PPU graphics backend, and ROM code changes. A demo of the Super Mario Bros ROM running with full graphics and sound will be shown.

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[19] Giacchi - Apple2Disk Device

Thomas Giacchi will talk about his new Apple2Disk device. He will go into how the DISK2 controller works. How bits are written and read from disk. How copy protection works. How weak bits work as a protection and why , if Apple had done a little change to the prom on the controller, weak bits wouldn't exist, and they could have stored 20 sectors per track instead of 16!. Then he'll talk about how the flux-copier overcomes all these things and how the emulator works. He'll demo it in action.

[20] Committee - The Tony Diaz and Roger Wagner collections

An overview of our work to retrieve and preserve these historic collections.