

# Alexei Solonari

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## EDUCATION

- *University of Central Florida* — Orlando, FL | 2022 - Expected 2027 (Current)
  - Bachelor's Degree in Computer Engineering, GPA: 3.53

## EXPERIENCE

### Program Review and Bug-Finding Research Assistant

- *University of Central Florida (APPLSEEd Lab, under Dr. Gazzillo)* | May 2024 - Present
  - Inspect source code & develop/test program analysis tools for finding bugs in software
  - Apply configuration-aware fuzzers including SyzDirect to find bugs in low-level systems in C such as Linux kernel, filing & investigating bug reports along the way
  - Read & summarize existing research on program analysis and fuzzers, present findings after performing in-depth data examination

### System Software Analysis Research Assistant

- *University of Central Florida (APPLSEEd Lab, under Dr. Gazzillo)* | Jan 2024 - May 2024
  - Tasked with identifying underlying factors of bugs in the Linux kernel found by Syzkaller fuzzer and custom kernel configuration files
  - Developed expertise in low-level kernel debugging by employing software review methods to identify root causes of fuzzer-induced issues that were otherwise previously only fixed with sanity checks
  - Gained proficiency in Linux filesystems and its VFS abstraction, preemptive multitasking functions including function locks & sleep states. Utilized advanced debugging tools incl. but not lim. to KASAN address sanitizer, KGDB, QEMU virtualizer, ftrace function tracer to address niche, system-level bugs

### Additional Experience

- *Fleming's Prime Steakhouse & Wine Bar*: Server Assistant/Backwaiter (Mar-Jan 2024)
- *DOMU Chibi Ramen*: Part-Time Front of House Associate (Aug-Mar 2023)
- *WonderWorks Orlando*: Seasonal Food & Bvg. Team Member (Jun-Aug 2022)

## RECENT PROJECTS

### Grower — Budgeting Software

- Technologies: Tkinter, Python, Alpha Vantage | *Knight Hacks 2023* Group Project
  - GUI budgeting program: features transaction importing, categorical organization & data presentation
  - Calculates amount for user to round up into savings/stocks from transactions
  - Displays list of most-traded stocks that user can click into for graph & info

### Attractulator — ML Facial Expression Detector

- Technologies: TensorFlow, Python | *ShellHacks 2023* Group Project
  - CLI program that takes in an image of a face & auto-crops, adds grayscale internally
  - Compares submitted image to model we trained using on-device ML
  - Outputs probability of unusual facial expression occurring within image

## CLUBS

- Active IEEE (Institute of Electrical and Electronics Engineers) UCF member
- Member of UCF EXCEL program, a math learning community of students & professors

## SKILLS

- C, Java, Python, Git, GitHub, GitLab, Mercurial, TensorFlow, Jupyter, API, Data Structures & Algorithms, object-oriented programming, software development, hardware engineering, firmware, low-level software engineering, front-end, back-end, full-stack, Windows, Linux, macOS, Bash, Z Shell, command line, terminal, Xcode, Visual Studio Code, IntelliJ IDEA, computer science, electrical engineering, linear circuits, statistics, real-world experience, verbal & written communication, soft skills, customer service, collaboration skills