Phaedrus Leeds

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Professional Skills and Qualifications

- Over six years of experience contributing to FOSS projects, mostly desktop Linux Operating Systems
- GNOME Foundation member
- Proficient with Linux development tools such as git, gdb, valgrind, autotools, and meson
- Most programming experience in C, some C++, Python, Go, Rust, and Bash

Work Experience

Software Engineer, *The Aerospace Corporation* July 2022 — Present

- Working on the Small Satellites team in the xLab prototyping department
- Contributing technical guidance on satellite design
- Contributing to ground support systems that communicate with deployed satellites

Maintainer, *Flatpak* October 2017 — Present

- Spearheaded crowdfunding for Flatpak on the Open Collective platform to support my volunteer work on Flatpak
- Implemented the support for offline updates in Flatpak, building on initial work by Philip Withnall, and maintained the feature for years
- Helped with general maintenance, having contributed several hundred patches and code reviews

Maintainer, *GNOME Software* November 2020 — Present

- Implemented parts of the UI refresh in the GNOME 40 and 41 cycles
- Re-implemented .flatpakref file handling in the GNOME 42 cycle
- Re-implemented webapp support in the GNOME 43 cycle

Freelance Software Engineer, *GNOME Foundation* November 2021 — March 2022

- Hired on contract by The GNOME Foundation to improve the support for Progressive Web Apps in the GNOME desktop environment
- Worked with designers and engineers across various organizations to improve web app support in GNOME Web, GNOME Software, and other components
- Designed and implemented new D-Bus APIs for multiple software components to interact in a robust and maintainable way
- Designed and implemented a new portal (in the xdg-desktop-portal project) to allow sandboxed apps to securely install launchers to the desktop environment menu

Software Engineer, *Endless OS Foundation* June 2017 — March 2021

- Maintained Endless OS, a Linux distribution designed for users with limited computer experience and Internet connectivity that has shipped on millions of computers
- Played a major role in implementing and maintaining support for offline (LAN and USB) OS and app updates, primarily in Flatpak, OSTree, EOS Updater, and GNOME Software
- Helped architect and implement support for secure Pay-As-You-Go technology in Endless, which has been deployed in the US and Kenya to expand access to computers
- Coordinated with partners deploying Endless OS to debug issues and customize the OS for their needs

- Made significant contributions to the OSTree project upstream, which enables atomic updates and provides a storage format for Flatpaks
- Presented at conferences such as GUADEC, communicating technical topics to a broad audience
- Mentored junior software engineers
- Worked in teams that use the scrum methodology

Software Engineering Intern, *Red Hat* May 2016 — May 2017

- Utilized gdb, GTK+ Inspector, and other tools to debug and improve software
- Added features to GNOME Builder including find and replace support and support for building Flatpak manifests
- Contributed patches to Flatpak

Lab Manager, *Computer-Based Honors Program* March 2014 — May 2017

- Managed a computer lab with Windows, OS X, and Linux machines
- Solved technical problems for students involved in undergraduate research
- Administered and monitored servers providing various services

Education

The University of Alabama, Tuscaloosa, AL August 2013 — May 2017

- B.S. in Computer Science, majored in CS and Applied Mathematics
- Honors College
- Computer-Based Honors Undergraduate Research Program (now Randall Research Scholars Program)
- The Mallet Assembly Honors Residence Program

Research Experience

Undergraduate Researcher, *University of Alabama* January 2016 — May 2017

- Worked under Dr. Travis Atkison in the Computer Science department
- Trained a neural network to classify Android malware using TensorFlow
- Wrote Bash and Python scripts to gather, process, and graph data

Undergraduate Researcher, *University of Alabama* September 2014 — April 2015

- Worked under Dr. Jeremy Bailin through the Computer-Based Honors Program
- Automated the creation of synthetic images of simulated galaxies using Python scripting
- Solved technical issues with running the SUNRISE radiative transfer code on a supercomputer

Undergraduate Researcher, *Clemson University* June 2014 — July 2014

- Developed a linear programming solver in C++
- Built a web interface for modeling heterogeneous networks
- Utilized git, LaTeX, PHP, JavaScript, and other technologies

Leadership Experience

Vice President, *UA Association for Computing Machinery* January 2016 — December 2016

- Coordinated with other ACM officers to plan meetings, workshops, and events
- Led workshops on git and gdb

Delivery Lead, *Code for Birmingham* May 2015 — March 2016

- Monitored and coordinated teams working on CFB projects
- Communicated with new and potential members

Brigade Captain, *Code for Tuscaloosa* July 2015 — January 2016

- Led a team of volunteers working on open source civic technology
- Advocated for open data in city government, including meeting with officials

Publications and Conference Talks

- Phaedrus Leeds: "*Integrating Progressive Web Apps in GNOME*"
  GUADEC, July 2022
- Phaedrus Leeds: "*Funding Flatpak Development on Open Collective*"
  Linux Application Summit, April 2022
- Phaedrus Leeds: "*Integrating Progressive Web Apps in GNOME*"
  Linux Application Summit, April 2022
- Phaedrus Leeds and Philip Withnall: "*Revitalizing GNOME Software*"
  GUADEC, July 2021
- Matthew Leeds: "*P2P Distribution of Flatpaks and OSTrees*"
  Libre Application Summit, September 2018
- Matthew Leeds: "*P2P Distribution of Flatpaks and OSTrees*"
  GUADEC, July 2018
- Matthew Leeds, et al: "*Examining Features for Android Malware Detection*"
  SAM '17 conference, April 2017
- Matthew Leeds, et al: "*A Comparison of Features for Android Malware Detection*"
  ACM SE conference, March 2017
- Matthew Leeds, et al: "*Preliminary Results of Applying Machine Learning Algorithms to Android Malware Detection*"
  CSCI conference, December 2016