

# Preston H. Carpenter

email: APragmaticPlace@gmail.com | personal phone: 417-438-7110  
linkedin.com/in/timidger | github.com/Timidger | timidger.github.io

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## EXPERIENCE

**Amazon Web Services (AWS)** | Seattle, WA

April 2020 - June 2025

*Software Engineer II*

- Led the migration of the global Amazon Linux operating system (OS) release process to Step Functions and Cloud Development Kit (CDK) achieving a 94% speedup from 4 days to 6 hours.
- Centralized OS release operations into a Python CLI, replacing an ad-hoc AWS web-console workflow. Engineers now use this tool instead of relying on tribal knowledge and outdated runbooks to release Amazon Linux.
- In charge of multiple operating system releases with strict deadlines and need-to-know information. Successfully released Amazon Linux (AL1, AL2, AL2023, and internal versions) in every AWS region and partition (Commercial, China, US-Government).
- Patched CVEs in critical software packages from upstream and other distributions. Was part of the chain of trust for embargo'd security patches to critical software packages (e.g. Linux kernel, `sudo`, `log4j`).
- Mentored fellow engineers, fostering their learning & growth. Managed an intern who converted to full-time, and a junior engineer who transitioned to a more technical role. Mentored other junior engineers, including an engineer that switched to a more technical role under my guidance.
- Automated manual tasks in a distributed system for all AWS regions/partitions with Rust, Python, and Bash.

**Starry** | Boston, MA

February 2019 - April 2020

*System Software Engineer*

- Implemented backbone fiber network fail-over with Python and networkd.
- Designed and produced SSH-based remote device support system for technicians, using Rust and gRPC.
- Wrote Rust and C++ firmware for embedded devices that power Starry internet.

**Google** | Montreal, QC

August 2018 - November 2018

*Software Developer Intern*

- Implemented a system to detect and remove malignant extensions in the Chrome Cleanup Tool in C++.

**Microsoft** | Redmond, WA

May 2018 - July 2018

*Software Engineer Intern*

- Developed a SKU document analyzer and reporting tool for Azure's hardware engineers in C# and HTML.

**Intuit** | San Diego, CA

July 2017 - December 2017

*Software Engineer Co-op*

- Java backend developer on "machine learning as a service" product that powers Mint and Turbo data insights.
- Eliminated manual deployment/testing by setting up automated continuous integration and deployment in AWS.

**Kinto Care** | Boston, MA

July 2016 - January 2017

*Full Stack Engineer Co-op*

- Developed flagship cross-platform phone app using Javascript with React and Cordova.
- Integrated and expanded back-end API powered by Flask and Postgres.

**Beechwood Software** | Boston, MA

January 2017 - July 2017

*Software Engineer Intern*

November 2015 - July 2016

- Contributed C++ to open-source Alljoyn framework in collaboration with Allseen Alliance and Linux Foundation.
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## PROJECTS

**Way Cooler (Wayland Window Manager)**

- Independently created tiling Wayland window manager with 6,000+ downloads and 2,000+ stars on Github.
- Designed a programmable interface using Lua that extends a basic compositor core in Rust.

## COMPUTER KNOWLEDGE

**Languages:** Python, Rust, Go, Java, Javascript, Typescript, C, C++, Bash, Lua

**Technologies:** AWS, CDK, gRPC, Protobuf, NGINX, systemd, Git, Wayland, Docker, Flask, Postgres

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## EDUCATION

**Northeastern University** | Boston, MA

September 2014 - May 2019

*Bachelor of Science in Computer Science*

Relevant Courses: Compilers, Computer Systems, Programming Languages,  
Networks and Distributed Systems, Algorithms and Data, Systems Security

TA'd Intro to Fundamentals of Computer Science for 4 years, Head TA for Programming Languages in 2018