

Shiyu Wu

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📄 allenshiyuwu

Work Experience

Software Dev Engineer II

Amazon Web Services

📅 2023/10 - Present

📍 Seattle, WA, U.S.

Software Dev Engineer I

Amazon Web Services

📅 2021/06 - 2023/09

📍 Seattle, WA, U.S.

- Work in EC2 Networking org. We own a massive "Blackfoot" fleet worldwide (15k+ hosts, total traffic ~400 Tbps) which performs network packet encapsulation & translation of all traffic between EC2 and S3 / DynamoDB.
- Lead a group of 5 people to improve the automation workflow for fleet growth and scaling.
- Delivered **Crow** project, a new EC2 Networking protocol, which provides EC2 instance's low latency access to DynamoDB through point to point connection. Contributed to feature support on Blackfoot in C/C++/Python. Led the feature operational work, VPC Gateway Endpoints and live migration support and world wide release for the team. Conducted integration testing with partner teams. This feature reduces EC2 instance's access to DynamoDB medium read latency from 3.0ms to 0.9ms.
- Delivered **SYN Flood Protection for S3inEC2** project by developing TCP-SYN proxies on Blackfoot for S3 NLB endpoints DDoS attack protection. Developed cryptographic salt generation system using AWS CDK. Built on-host config and salt sync and control workflows in Python. Led the feature operational work. This security feature is a must-have for S3's migration into EC2 network fabric.
- Mentored one intern for successfully delivering Blackfoot Dataplane Health Monitoring project with return offer.
- Regularly oncall and improve team-owned services' operations.

Software Dev Engineer Intern

Amazon Web Services

📅 2020/05 - 2020/08

📍 Austin, TX, U.S.

- Interned at AWS EC2 VPC Dataplane team with return offer.
- Designed and delivered **Path Maximum Transmission Unit (PMTU) Discovery** feature in C/C++ in Blackfoot's dataplane for traffic between EC2 and S3 NLB.
- The feature introduces <1% performance overhead with security insurance and extensibility. It allows faster packet loss recovery and provides more control of large packet traffic.

Teaching Assistant

University of Texas at Austin

📅 2019/08 - 2021/05

📍 Austin, TX, U.S.

- CS388G - Algorithms: Techniques & Theory (Graduate level)
- CS429 - Computer Organization & Architecture
- CS350C - Advanced Computer Architecture
- MKT382 - Data Analysis & Visualization

Teaching Assistant

University of Michigan - Ann Arbor

📅 2018/09 - 2019/05

📍 Ann Arbor, MI, U.S.

- EECS484 - Database Management System

Education

University of Texas at Austin

M.S. in Computer Science

📅 2019/08 - 2021/05

📍 Austin, TX, U.S.

GPA: 3.97/4.0

University of Michigan - Ann Arbor

B.S.E. in Computer Science

📅 2017/09 - 2019/05

📍 Ann Arbor, MI, U.S.

GPA: 3.97/4.0, *Summa Cum Laude*

Shanghai Jiao Tong University

B.S.E. in Electrical & Computer Engineering

📅 2015/09 - 2019/08

📍 Shanghai, China

GPA: 3.75/4.0, Rank: 7/205

Honors & Awards

- National Scholarship (Top 0.2%) 2016/09
- King, Roger Scholarship 2018/08, 2019/01
- SJTU Outstanding Graduate 2019/06
- Jun Yuan Scholarship (Top 2%) 2016/11

Technical Skills

Programming: C C++ Python Shell
SQL Rust

Tool & Framework: Linux AWS CDK
Data Plane Development Kit (DPDK) NoSQL
PyTorch Git

Knowledge fields: Linux Distributed System
Computer Architecture SDN DPDK
AWS DevOps

Publications

👥 Conference Proceedings

- French, K., Wu, S., Pan, T., Zhou, Z., & Jenkins, O. C. (2019). Learning behavior trees from demonstration. In *2019 international conference on robotics and automation (icra)* (pp. 7791-7797). IEEE.