Shiyu Wu

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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.

- Lead a group of 5 people to improve the automation workflow for team fleet growth.
- Work in EC2 Networking org. We owns massive "Blackfoot" fleet worldwide which performs network packet encapsulation & translation of all traffic between EC2 and S3 / DynamoDB.
- 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-style 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 | Typescript | Rust | SQL

Tool & Framework: Linux | DPDK | Git | AWS CDK | NoSQL | PyTorch

Knowledge fields: Distributed System | Linux | Computer Architecture | SDN | Intel DPDK | AWS CDK | 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.