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Hamid Zare

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EXPERIENCE

Sr Software Engineer (L6)	**HPE - Cray AI**	**June 2021 – Present**

Continuation of my work in Determined AI with mostly the same team.

Software Engineer	**Determined AI (Acquired)**	**Aug 2019 – Present**

MLOps Startup. Engineer #15. Acquired by HPE in 2021. Developing an open source end-to-end deep learning pipeline to enable automation of model selection and hyperparameter tuning.

Software Engineer Intern	**Real-Time Innovations (RTI)**	**Summer 2019**

- Designed and implemented APIs to expose information about the type system for customers. *C, C++*
- Evaluate, research, and develop a pluggable lossless compression solution for real-time, peer to peer communication of user data. Targeting use-cases for autonomous vehicles: sensor sweeps and camera feeds.

Software Engineer (RA)	**Institute for Software Integrated Systems**	**Jan 2017 – May 2019**

Researched and developed in the intersection computer networks, distributed systems, cybersecurity, and robotics with a flavor of CS education. My main projects: NetsBlox and RoboScape. [Part-time]

- Increased messaging throughput by 24x under load.
- Improved early bug discovery: CI, Chaos Monkey
- Guaranteed type safety for user-facing services.
- Added dynamic help generation for 120+ APIs
- Created a portable batch provisioning tool to facilitate initial robot setup & connection to a new access point.

DevOps Intern	**TebSoft**	**Summer 2015**

- Sped up updates & page loads Squid-Cache and Nginx.
- Optimized data backup process in HIS software.

LANGUAGES AND TECHNOLOGIES

- Go, C++, C, Python, TypeScript, JavaScript, Bash
- Linux, Docker, AWS, GCP, K8, Ansible
- Git, Agile Methodologies, CI (Jenkins)
- SQL & NoSQL, PostgreSQL, MongoDB, S3, Redis
- Keras, Tensorflow, TF.js, PyTorch, MLOps, Horovod
- React, Node.js, Flux, RoR, Vue.js

ACADEMIC EDUCATION

MS in Computer Science	**Vanderbilt University**	**2017 – 2019**

Web-based System Architecture; Cloud Computing; Advanced Algorithms; Machine Learning; Deep Learning; Reinforcement Learning; Distributed Systems; Concurrent Java Programming; Modeling & Simulation;

BS in Computer Science	**Azad University**	**2011 – 2015**

Coursework: Data Structures; Databases; Statistics & Probability; Artificial Intelligence; Software Design; Computer Networks; Operating Systems; Programming Languages; Operational Research;

SELECTED HOBBY PROJECTS ⌢

- **Webcam Mods** (2020) Linux 1st face tracking, background removal/blur, crop, zoom, record/replay. *Python, TF* ⌢
- **Roboscape** (2018) Developed an educational cybersecurity playground using robotics and NetsBlox *C, JS* ⌢
- **Fog Alert** (2018) A 3-component fog based, intrusion detection system with simple face recognition. *Python, C*
- **Next Block Prediction** (2017) Suggest next blocks in block-based languages: RNN, Ngrams, Word2Vec. *Python* ⌢
- **Sketch Adventures** (2018, Global Game Jam) Incorporated a doodle classifier to create a game. *Python, Rust* ⌢
- **Distributed PubSub Broker** (2017) Led a team to design and implement three different architectures of a resilient PubSub broker with QoS using ZeroMQ, CHORD, and Zookeeper from scratch. *Python* ⌢
- **NetsBlox Player** (2018) A mobile app to run networked, user-created, programs on IOS & Android. *JS, Cordova* ⌢
- **Generalizable QLearning Framework** (2018) A DQN framework for solving board games. *Python, JS* ⌢
- **Smart Home Automations w/ RPI & ESP** (2016) a collection of smart home DIY projects *Python, Bash*

SELECTED PUBLICATIONS ⌢

- "Educational Robotics with a Twist", H.Zare, M.Maróti, A.Ledeczi, *2018 - Blocks+ IEEE*
- "NetsBlox and Wireless Robots Make Cybersecurity Fun", A.Ledeczi, H.Zare, G.Stein, *2019 - ACM SIGCSE*
- "A Visual Programming Environment for Introducing Distributed Computing to Secondary Education", *Elsevier*
- "You can teach computer networking in high school", B.Broll, H.Zare, D.Do, M.Misra, A.Ledeczi, *2017 - IEEE*