Imran Hossain
INFRASTRUCTURE & SOFTWARE ENGINEER

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Highly motivated software engineer with strong skills in programming, containerization, and infrastructure-as-code development. Proficient in Python, C#, and Java as well as with Kubernetes, AWS, and Terraform. Excellent written documentation and teamwork skills and a quick learner. Interested in building tooling & infrastructure that helps developers do their jobs.

Skills

Infrastructure	Nix, Kubernetes, Docker, AWS, Terraform, CloudFlare, GitOps w/ Flux, GitLab CI, GitHub Actions
Backend	Python, FastAPI, Java, Node.js
Frontend	TypeScript, Svelte/SvelteKit, Bootstrap, Tailwind, HTML, CSS, Android, Flutter/Dart, .NET/C#
UNIX	Nix/NixOS, Linux, Git, Vim, Bash/Fish, Awk

Experience

Senior Software Engineer — *Reston, VA*
SAIC — *May 2023 – Present*

- Led our team's pivot to containerization and Kubernetes-based deployment
- Wrote Terraform modules to reduce k8s cluster & application deployment from days to minutes
- Deployed and managed multiple EKS Kubernetes clusters used by a team of 50+
- Assisted in architecting a scalable queue-based approach to containerized machine learning applications
- Developed CI/CD pipelines to rapidly deploy and test containerized applications for development & peer review

Software Engineer — *Reston, VA*
SAIC — *May 2022 – May 2023*

- Developed a Kubernetes-based cloud-agnostic AI/ML development platform with scalable compute
- Deployed and administered Kubernetes clusters in an air-gapped environments

Software Engineer Intern — *Reston, VA*
SAIC — *May 2020 – May 2022*

- Working under an Agile framework in an assigned team
- Created a serverless dynamic form webapp using AWS CDK, DynamoDB, Lambda, & API Gateway

Research Assistant — *Cleveland, OH*
CASE WESTERN RESERVE UNIVERSITY · CENTER FOR COMPUTATIONAL IMAGING & PERSONALIZED DIAGNOSTICS — *Jan 2018 – Dec 2020*

- Ported radiomics feature descriptor (RADISTAT) from MATLAB to Python
- Publication accepted at IEEE Journal of Biomedical and Health Informatics

Software Engineer — *Washington, DC*
CHILDREN'S NATIONAL HOSPITAL · SHEIKH ZAYED INSTITUTE FOR PEDIATRIC SURGICAL INNOVATION — *Summer 2018, Summer 2019*

- Developed an app for the Microsoft HoloLens to visualize ultrasound imaging in real-time in augmented reality
- Used Visual Studio, C#, and C++ to write apps
- Developed a cross-platform mobile app in Flutter to help anesthesiologists with dosing patient-controlled analgesic

IT Intern — *Washington, DC*
SIDWELL FRIENDS SCHOOL — *Jul 2017 – Aug 2017*

- Operated helpdesk and ticketing system
- Assisted in service and backend migration
- Managed school devices through JAMF
- Trained staff in technology use

1-on-1 Programming Tutor *Bethesda, MD*

SELF-EMPLOYED *Jun 2016 – Aug 2016*

- Tutored a rising high school freshman in programming, focused on C++
- Client had no prior experience in programming
- Received positive evaluation from client
- Wrote and designed own curriculum and guide

Projects & Contributions

March Madness Simulator *GitHub*

TYPESCRIPT · SVELTE · SVELTEKIT · TAILWIND *Jan 2025 – Apr 2025*

- Monte Carlo simulator for bracket pools in NCAA men's & women's basketball tournament
- Simulates tournaments thousands of times to determine likelihood of each bracket winning its pool
- Highlights important future games for each bracket & performs what-if analysis
- Hosted on fly.io at madness.imranh.org; code tracked in GitHub

Nix Community *GitHub*

NIX · BASH *Jun 2019 – Present*

- Occasional contributor to various Nix Community projects, including nixpkgs, home-manager
- Use of nix-darwin & home-manager for personal system management; code tracked in GitHub
- Continuous integration via GitHub Actions to regularly update systems

Education

M.S. Computer Science, Algorithms & Theory *Cleveland, OH*

CASE WESTERN RESERVE UNIVERSITY · GPA: 4.00/4.00 *Jan 2020 - May 2022*

- Thesis: Graph Matrices under the Multivariate Setting

B.S. Computer Science *Cleveland, OH*

CASE WESTERN RESERVE UNIVERSITY · MAGNA CUM LAUDE · GPA: 3.89/4.00 *Aug 2017 - May 2021*

- Relevant Coursework: Advanced Algorithms, Software Engineering, Machine Learning, Data Privacy, Programming Language Concepts, Computer Networks, Cryptography, Computer Vision, Graph Theory