# Arsalan Bin Najeeb

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## EDUCATION

**George Washington University** | M.S. Computer Science — May 2025
**Knox College** | B.S. Computer Science and Business and Management | *Cum Laude* — Jun 2020

## RESEARCH EXPERIENCE

**Graduate Research Assistant** | George Washington University — Jun 2024 - Present

- Developed LLVM passes to track unsafe Rust code execution paths and created benchmarking programs for Hyper and Tonic (gRPC/Protobuf), enabling novel compiler-level safety analyses through Rust compiler instrumentation
- Applied static and dynamic program analysis on Rust codebases to identify how and where developers implement unsafe code, leading to insights on where efforts for language development should be spent
- Conducted case studies on existing work on Rust address sanitizers and evaluated their performance overhead on our benchmark suite

**Trustworthy AI Projects** | George Washington University — Jan 2024 - May 2025

- Led AI alignment project in Weak-Strong generalization, evaluated effects on model safety using the ETHICS benchmark
- Engineered model interpretability techniques using Hugging Face for model finetuning and attention visualization for transformer architectures, enhancing decision-making transparency
- Conducted exploratory projects on adversarial attacks, including perturbation based attacks on vision models and prompt injection techniques for bypassing LLM guardrails

**Undergraduate Research Assistant** | Knox College — Jun 2018 - Jun 2020

- Designed a task mapping algorithm for the Dragonfly topology that supports non-square jobs, poster presented at CCSC MW'18 and awarded first place in student research
- Developed undergraduate teaching materials on heterogeneous computing using Raspberry Pis, OpenMP and C, poster presented at Midstates Consortium'19
- Investigated K-12 computing curriculum across South Asia, highlighting disparity in CS education access, findings published in ICER'20 and recognized with a special mention

## WORK EXPERIENCE

**Software Engineer** | TWST Events (Previously CSS) — May 2021 - Aug 2023

- Developed and maintained microservices platform serving 10,000+ users across 2 **Java** SaaS web applications using Micronauts, leading full-stack development and using Agile development methodologies to deliver new features
- Led system modernization initiative orchestrating UI overhaul across Vue, Next.js, and React applications implementing OWASP security and W3C accessibility standards, strengthening platform security compliance
- Designed distributed architecture implementing **RESTful** APIs across microservices, using Grails GORM and RabbitMQ; implemented realtime webhooks and refactored code with reusable modules to boost feature delivery
- Managed Docker and CI/CD pipelines with k9s, reducing system downtime by 40% enabling rapid production

**Full Stack Engineer** | Stream Engine — Nov 2020 - May 2021

- Improved user acquisition by 30% by designing a multi-tenant SaaS product in **Django** and **PostgreSQL**

## TECHNICAL SKILLS

- **Programming** Java, Python, JavaScript, HTML5, Rust, SQL, PHP, C, LaTeX
- **Frameworks** React, Vue, Next.js, Svelte, React Native, Django, Laravel
- **AI / ML** PyTorch, TensorFlow, Ollama, Hugging Face, Model Finetuning
- **Cloud and Devops** AWS (ECS, EC2), GCP, Docker, Kubernetes, CI/CD, Git, Apache, Linux

## LEADERSHIP ACTIVITIES

**SEAS Ambassador | GWU** — Oct 2024 - May 2025

- Collaborating with a team of 6 ambassadors to address academic and social challenges for students in the School of Engineering and Applied Sciences

**Awards and Publications**

- 1st place Student Research, Consortium of Computing Science Colleges MW18 | Philip Haring and John Houston Award; Promoting International Understanding | Deans Honor List | Mortar Board Member | Sigma Xi Nominee | M. M. McGill et al. Exploring the enacted computing curriculum in k-12 schools. Association for Computing Machinery, 2020.