

# Shreya Bhandare (She/her)

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## EDUCATION

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- **Virginia Tech** Blacksburg, VA  
*Master of Science, Computer Science* Aug 2021 - May 2023
  - Coursework : Data-Center Scale Computing, Advanced Parallel Computation, Advanced Operating Systems, Multiprocessor Programming, Software Engineering
- **Cummins College of Engineering, University of Pune** Pune, India  
*Bachelor of Engineering, Computer Science; First Class with Distinction* Jun 2013 - May 2017

## EXPERIENCE

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- **Meta Platforms (Facebook)**, Systems Engineering Intern - Menlo Park, CA May 2022 - Aug 2022
  - **AI/HPC Systems Engineering Team** - Simulation and performance evaluation of data center networks
  - Worked on modeling and evaluating GPU communication collectives (NVIDIA's NCCL All-Reduce, All-to-All) used in Deep Learning training networks.
  - Developed models on a NS3-based packet-level simulator, Atalanta currently modeled for RoCE networks.
  - Tools & Technologies: C++, Apache Thrift, Python, NCCL, Distributed Training, Inter-GPU communication
- **Virginia Tech, HPC Systems Lab**, Graduate Research Assistant - VA Aug 2022 - Present
  - Ongoing research project & thesis with Dr. Dimitrios S. Nikolopoulos on increasing GPU utilization for AI workloads is being funded by Cisco
  - Trying to increase utilization of edge accelerators for multiple TensorFlow jobs running simultaneously in a virtualized environment
  - Tools & Technologies: C++, TensorFlow, Virtualization, API Remoting
- **Virginia Tech, Compiler Systems Lab**, Graduate Research Assistant - VA Feb 2022 - May 2022
  - **Exploit-logic** - Performed engineering work contributing to ongoing research of automatic exploit generation
  - Translated LLVM intermediate representation of OpenSSL (and other small repositories) to a assembly-like language - JUMP using Haskell - ([github](https://github.com))
- **AMD - Pensando Systems**, Member of Technical Staff - Bangalore, India Sep 2020 - Jul 2021
  - **Distributed Services Switch** - Switch with network & storage tasks offloaded to Pensando's DSC (SmartNIC)
  - Developed platform dependant modules for power, temperature & cooling control that monitored their status, updated internal Open vSwitch database & triggered actionable events in a state machine
  - Added module to fetch & validate packet metrics in DSC's test simulation infrastructure
  - Tools & Technologies: C, C++, YAML, OVSDB, Python, gRPC, OpenSwitch OPX
- **Shoreline IoT**, Software Engineer - Pune, India Aug 2018 - Aug 2020
  - **iCast1 CBM** - wireless, dual-MCU platform that streamlined communication between remote sensors and cloud
  - Devised a mechanism for provisioning Wi-Fi on iCast1 using Bluetooth Low Energy(BLE)
  - Designed custom services & profiles based on Attribute Protocol (ATT) for BLE Central & Peripheral devices
  - Improved inter-MCU serial protocol efficiency by 50% by replacing polling-based algorithm with Direct Memory Access(DMA) also enhancing system concurrency by saving CPU cycles that were previously used in data transfer
  - Technologies : C, Vim, IPC, Event Driven & Concurrent Systems, TCP/IP networking, nRF, MW300
- **Cisco Systems**, Network Consulting Engineer - Pune, India Jul 2017 - Jul 2018
  - **ACI Automation** - developed Python scripts for automating manual device configuration, device upgrade verification, debugging network config issues & troubleshooting
  - Earned 'Connected Recognition' award in the ACI project for reducing time required for upgraded device verification by 70%
  - Acquired CCNA & CCNP-switch Certifications
- **IBM Software Lab**, Undergraduate Project Intern - Pune, India Jul 2016 - Jul 2017
  - Delivered an open source, extensible 'Key Management Library' based on OASIS' Key Management Interoperability Protocol (KMIP)
  - Published our work in the Springer's 'Advances in Intelligent Systems and Computing' Journal ([link](#))

## SKILLS

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**Proficient:** C, C++, Java, Python, MySQL, NoSQL, Haskell, HTML/CSS

**Familiar:** Javascript, GoLang, Android, REST, LLVM