Mohith Lokesh

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Work Experience

- **Amazon Web Services: GenAI Leadership (Oct '23 to Present)**
  - Lead a team responsible for NLP, Vision, and Speech models for AWS Customers via the Generative AI Innovation Center.
- **Amazon Alexa: AI/ML Leadership (May '22 to Oct '23)**
  - Led an R&D team of AI scientists to find innovative ways to advance the field of Speaker Understanding, Recognition, and Personalization.
  - Built AI/ML pipelines that power accurate, on-device features at scale on Amazon Alexa devices.
- **Apple AI: Machine Intelligence Neural Design (MIND) Leadership (March '18 to May '22)**
  - Design machine learning models for a wide range of AI applications including computer vision, NLP, speech recognition.
  - Propose novel ML architectures and methods that achieve state-of-the-art accuracy.
  - Design and train power-efficient ML model for the purpose of deployment on device.
  - Collaborate with other engineers to enable Apple products with efficient and accurate ML solutions.
- **Apple: System Performance and Architecture (Aug '16 to March '18)**
  - Proven track record in leading the team and architecting new tools/methodologies.
  - Architect Apple's portable and desktop offerings with a focus on performance.
  - Develop projection models to estimate performance of our products, years in advance.
  - Evaluate the performance of next-generation hardware and operating systems.
  - Collaborate with cross-functional teams to debug performance bottlenecks and identify architectural improvement areas.
  - Characterize performance to influence product road-map and make effective power-performance trade-offs.
  - Present performance data and analysis to cross-functional teams including senior management.
  - Identify gaps in test coverage and define new performance tests or bolster existing ones.
  - Drive automation improvements from setup to execution to reporting.
- **Qualcomm: ML Subsystem Validation (June '14 to Aug '16)**
  - Led the validation of the neural processing subsystem for the Qualcomm AI Engine.
  - Developed drivers for SoC blocks such as the cache coherency module and the memory management unit.
  - Drafted Post-Silicon validation test plans, code test cases in C, perform Emulation and Post-Silicon validation, and debug failures using Trace32.
  - Triaged bugs by identifying sensitivity to process/voltage/temperature and uncovering design/manufacturing/documentation issues. File tickets for the identified issues.
  - Drove several critical hardware debugs from start to completion.
  - Brainstormed and developed a test framework that carried out cache coherency stress-testing which helped identify several hardware bugs, saving $2M in chip respins.
  - Mentored an intern and a new engineer in the team.
- **Qualcomm: Pre-Silicon Design Verification (May '15 to Aug '15)**
  - Performed Pre-Silicon Design verification for the SoC's cryptographic core using SystemVerilog and UVM.
  - Drafted Pre-Silicon test plans to identify common and corner use-cases for the core, and code test cases with a focus on functional coverage.
  - Debugged failures using Verdi.
- **NVIDIA: GPU Power Team Intern (Aug '13 to Jan '14)**

    - Developed features for an in-house power estimation tool in Python to estimate power and performance numbers for future chips on the company's roadmap.
    - Profiled the tool to identify bottlenecks and optimized the processor-intensive code sections to quicken up the response time.
    - Developed a Python/Bash script that run nightly regressions, parsed and tabulated results as an HTML report, flagged anomalies in the regression runs and sent a report as a daily email.
- **Qualcomm: RTL Design Intern (May '13 to Aug '13)**
    - Designed several internal blocks of a new camera-filter IP core in Verilog RTL.
    - Performed RTL linting using Atrenta SpyGlass.
    - Wrote test-benches with randomized control and data signals to verify design functionality.
    - Developed shell scripts to automate routine tasks.
- **Research Assistant (Jan '13 to May '13)**
    - FPGA-based hardware development using Verilog for the Compact Muon Solenoid (CMS) experiment for the Large Hadron Collider (LHC) at CERN.
- **Project Assistant (Jan '13 to May '13)**
    - Developed web content for the Division of Continuing Studies at UW-Madison.
- **Teaching Assistant (Sept '12 to Dec '12)**
    - TA for the Microprocessors Theory and Lab courses. Dealt with theoretical concepts, programming and problem-solving for ARM7 as well as ARM Cortex M3.
- **Research Associate (Aug '11 to Aug '12)**
    - Investigated topics under the domain of biometrics including Face Detection & Recognition, Signature Verification, Voice Recognition and Security of Biometric Templates. Published research results at various international venues.
- **Research Staff (Apr '11 to Jan '12)**
    - Development of a research project titled 'Portable Patient Monitoring System'.
- **Teaching Assistant (Aug '11 to Dec '11)**
    - Conducted lab-sessions on Microprocessor and C/C++ Programming.
    - Conducted Image Processing workshops to aid practical understanding of subjects..

Achievements

- **Scholarship Grants**

  Sir Ratan Tata Merit Scholarship - '11.
  Narotam Sekhsaria Scholarship - '09, '10.
  National Scholarship in recognition of the high position secured in the Secondary Examination - '06 and the Higher Secondary Examination - '08.

- **Certifications**

Certified in Embedded Systems by Ameya Center for Robotics & Embedded Technology - '10.
Completed a course 'EmbeddedLab20' at Sardar Patel Institute of Technology, which involved the implementation of digital signal processing fundamentals in real-time systems - '11.

- **Awards**

Inter-collegiate award for best microcontroller based autonomous robot in a competition conducted by IEEE San Francisco in '10
Best paper award for the paper titled 'Urban Green Ideas' by IEEE - '09.

Accomplishments

- **Workshops**

Conducted over 20 workshops and short term training programs in the fields of Image Processing and Embedded Systems.

- **EVID Solutions**
  Co-founded EVID Solutions which deals with core research, project guidance and developing solutions in the fields of Embedded Systems, VLSI, Image Processing and Digital Signal Processing - '10.

- **Editorial Team, College Magazine**
  Served on the Editorial Team for the annual college magazine 'Synapse' - '10.

- **Co-authored Lesson Plan**
  Co-authored a lesson plan on Object Oriented Programming for IEEE's trycomputing.org.

- **CyberHosters**
  Headed CyberHosters - a webhosting company offering a wide range of hosting services such as Shared Hosting, Dedicated Server Hosting, Reseller Hosting, Virtual Private Server (VPS) Hosting etc.

- **TechUpdater**
- Founded TechUpdater - a technology blog serving reviews and updates on recent advancements and breakthroughs in technology.

Education

- **Stanford University** 2019 - Current
  GPA: 4.00/4.00 Graduate Program in Aritifical Intelligence
- **University of Wisconsin-Madison** 2012 - 2014
  GPA: 3.90/4.00 Master of Science (M.S.) in Electrical and Computer Engineering
- **University of Mumbai** *Distinguished alumnus* 2008 - 2012
  GPA: 3.98/4.00 Bachelor of Engineering (B.E.) in Electronics and Telecommunication Engineering
- **Jai Hind College** 2006 - 2008
  High School Diploma