

# Keerthana Purushotham – Winter 2025 – [ ALL LINKS ] [github.com/keerthanap8898/bio](https://github.com/keerthanap8898/bio)

✉ [keerthanap0808@gmail.com](mailto:keerthanap0808@gmail.com) | ☎ +1 858-203-8957 [ PST ] | ★ H1B FY2026 | 📅 Schedule 30m to speak | 📁 Portfolio

🌐 LinkedIn | 🐙 GitHub | 📄 Citations | 🏠 IEEE Member | 🎓 UCSD Alumni | 📁 Substack | 📄 Medium | 🎧 Audio 13m44s

## SKILLS

- **Code** – Rust | Python | JavaScript | Typescript | React | C | Pytorch | C# | C++ | Java | bash | Git | CDK | SQL | ARM & Cross-tooling. | Linux kernel & iOS.
- **Tools** – DynamoDB, S3, APIGateway, CloudWatch, CDK, CloudFormation, Lambda, IAM, etc | TensorFlow & Keras | Kubernetes | System Performance.
- **Logic** – REST, Serverless & Network | Async, load-balancing & low-latency | Full-stack | Advanced Math & Statistics | ML, Deep-Learning, NLP & GenAI.
- **Security** – CVE Analysis- CVSS, NIST, CISA, Mitre, Debian, Redhat, Suse, FIPS | Threat Modeling & Remediation | Adversarial Attacks & Mitigation | CISO.

## EXPERIENCE

### A) Amazon Web Services ( AWS ) – Software Developer | EC2, Amazon Linux Threat Mgmt. | Seattle, WA. AUG 22'–Now (3 yrs.)

1. **Security & Operations** : distros - ALI2, AL1, AL2, AL2023 - ( incl. AL2023-desktop & all EC-2 system-packages ).
  - ① **Linux CVE Management & Response** – Managed Linux & kernel CVE detection with a strict 2-day SLA, handling 1,475+ CVEs, including Sev-2 incidents and remediation planning.
  - ② **Vulnerability Patching** – Fixed 15+ security vulnerabilities in Amazon Linux packages, some requiring FIPS compliance.
  - ③ **Knowledge Sharing & Documentation** – Maintained critical runbooks and mentored new developers.
2. **Design & Development** : AWS - Linux docx. [ [docs.aws.amazon.com/linux](https://docs.aws.amazon.com/linux) ]
  - ① **Full-stack & Operational features** – On top of triaging, mitigating, resolving complex bugs & bottlenecks across 2 legacy services; I pushed 12+ React features for a 3rd, new edge-compute APIGW service with role-specific access, to collaboratively deliver a high-frequency, data-intensive UI to provide real-time CVE status + related data; all including unit, integration & regression test coverage;
  - ② **Cloud Development & Infrastructure Migration** - Migrated Rust-based client infra coupled with Py Lambdas, across services & engineered nested CloudWatch alarms for edge-compute based rate-limiting, request throttling, etc with robust, integrated DevOps.
  - ③ **Networking & Concurrency Architecture** – Built privacy-enhanced RESTful features & secure client-side behaviors across distributed AWS infrastructure across services (DynamoDB, IAM, S3, APIGW, CloudFormation, etc). This includes several dense multithreaded + async workflows (Rust, Py, Js), each optimized for resilience against all classes of network & edge-case failures.
3. **Analytics & Automation** : Amazon Linux Security Centre CVE advisories ( ALCE ) [ [alas.aws.amazon.com/faq.html](https://alas.aws.amazon.com/faq.html) ]
  - ① **Automated CVE Evaluations** – Designed AI-driven CVE scoring and recommender systems, integrating AmazonQ-based chatbots to reduce zero-day SLA targets from two days to near real-time.
  - ② **Security focused NLP & Statistics** – Built an automated CVE impact analysis algorithm, applying NLP & time-series analytics to enhance security risk assessment and reduce manual workloads for customers.
  - ③ **Scripting** – Automated repetitive steps via custom scripts, saving approximately one week per month in manual overhead.

### B) BP Logix [ [bplogix.com](https://bplogix.com) ] – Software Development Intern | San Diego, CA. JUN 21'–SEP 21' (4 mos.)

1. **Version Control Migration**: Led the transition from TFVC to Git, creating a comprehensive run-book for seamless replication.
2. **DevOps & Agile Exposure**: Delivered two bug fixes in C# using VScode, engaged in Scrum processes, enhancing understanding of Agile development, KPIs & release goals.

### C) Cleo Communications [ [cleo.com](https://cleo.com) ] – Software Developer | Bengaluru, IN. SUMMER 19' & FEB 20'–DEC 20' (3 + 11 mos.)

1. **ML-Powered Data Transformation**: Built a pipeline to map features across disparate datasets, evaluating RNNs, Logistic Regression, and Fuzzy Logic (which performed best).
2. **Product Testing & Debugging**: Conducted cross-service unit testing on CIC Clarify (Node & Cluster); documented bugs via Postman.

### D) Samsung R&D India – Research Intern | Bengaluru, IN. MAR 19'–NOV 19' (8 mos.)

1. **Web Crawling & Data Extraction**: Developed subject-specific crawlers to extract social media data for research and analysis.

## PUBLICATIONS & RESEARCH PROJECTS — [ approx. 50 Cites from 2021 to September 2025 ]

[Google Scholar](#) | [Scopus Author ID: 57221594595](#) | [ORCID record: 0009-0000-8197-704](#) | [IEEE Author ID: 37088644371](#) | [ResearchGate](#)

→ Reviewed 8+ IEEE papers in 2025. | → Member of [CWE.mitre.org/](https://cwe.mitre.org/).

1. **Text To Video App** – Async API with the Genmo Mochi-1 model hosted on 8xH100 GPU Kubernetes work nodes. | [LinkedIn](#) | [GitHub](#) – WIP.
2. **Accuracy Is Not Enough** – Confusion Matrix Metrics That Actually Work in CVE Impact Prediction. | [LinkedIn](#) | [Substack](#) | [Medium](#)
3. **Cloud Storage Security Risks, Practices & Measures: A review.** | 40 cites | [IEEE Xplore](#) – Jan 1, 2020.
4. **Image de-noising using Auto-encoders & Spatial Filters for Gaussian Noise.** | 7 cites | [IEEE Xplore](#) – Mar 15, 2021 | [GitHub](#).
5. **Context-Based Filtering of Conversational Data.** | 2 cites | [ACL – May 22, 2021](#) | [GitHub](#).

## EDUCATION

### A) University of California, San Diego ( UCSD ) – M.S. Computer Science | GPA 3.83/4.00 | San Diego, CA. DEC 20'–JUN 22' (2 yrs.)

[ AI-&-Systems ] – Courses : Algorithm-design | adv.Data-structures | Operating-Systems | Computer-Organization & System-programming-(Arm) | OS-Security | ML-algorithms | Probabilistic-reasoning | Recommendation-systems & Web-mining | adv.Statistical-NLP | StructuredPrediction-in-NLP | Ethics,society & Data-Sc.

1. **Graduate Teaching Assistant** : Mar 21 – Jun 22', 16 mos.
  - ① [ Spring 22' ] **Advanced Data Structures** | CSE 100 – class of 300+ students with Paul Cao & Dr. Debashis Sahoo.
  - ② [ Winter 22' ] **Graduate Algorithm Design & Analysis** | CSE 202 – class of 500+ students with Dr. Russel Impagliazzo.
  - ③ [ Fall 21' ] **Graduate Algorithm Design & Analysis** | CSE 202 – class of 500+ students with Dr. Ramamohan Paturi.
  - ④ [ Spring 21' ] **Computer Organization & Systems Programming** | CSE 30 – class of 500+ students with Bryan Chin.

2. **Grace Hopper Scholar** : 2021–2022, 1 year

3. **Projects & Graduate Course Work** : Jan 21'–Jun 21', 6 mos.

- ① [ NLP ] **Neural CRF NER Tagger** – Built Bi-LSTM-CRF models for Named Entity Recognition (NER), beating baseline in sequence labeling.
- ② [ NLP ] **Neural CRF for Constituency Parsing** – Built CKY-based constituency parser for PTB dataset, optimizing partition fn on GPU.
- ③ [ OS ] **Ubuntu System Performance** – Analyzed CPU, memory, scheduling, networking & FS for metrics like efficiency, latency etc.

4. **Graduate Research Apprentice** : Jan 22'–Jun 22', 6 mos. | **NLP & Recommender Systems Lab** advised by Dr. Julian McAuley

- ① **NLP in Finance & Stats** – Researched stock prediction via text inference & trend analysis; specialized in equities, options & futures.

### B) Ramaiah Institute of Technology ( MSRIT ) – B.E. Computer Science | GPA 9/10 | Bengaluru, IN. AUG 16'–AUG 20' (4 yrs.)

1. **Technical Awards** : ① Best Final Year Project 2020 MSRIT | ② Samsung PRISM Research Program Finalist 2020.

2. **Certifications** : ① Docker: Microfocus | ② Deep Learning for CV: NVIDIA | ③ Data Sc. for Engineers: NPTEL | ④ IoT - Raspberry Pi: Vocational Course

### C) Other – Schooling | Bengaluru, IN. JUN 01'–APR 16' (15 yrs.)

1. **Grades** : ① [ Sophia High School ] 10th ICSE Boards: 92% | ② [ Deeksha Integrated IIT Coaching ] 12th Boards: 90%
2. **Awards & Activities** : MUN, debate, theater, school 1st rank & state top 50 several times between 2010 & 2015 across the annually-conducted, international Olympiads organized by the Science Olympiad Foundation (SOF), athlete in field / track events. Received the following medals -
  - ① IMO (Math): 3 Gold, 2 Silver | ② ISO (Science): 4 Gold, 1 Silver | ③ IEO (English): 1 Silver, 1 Bronze.