AKASHPRABU ATHIKOMBAI CHANDRASEKARAN

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EDUCATION

University of Southern California — *Los Angeles, CA*
Master of Science in Computer Science — *Aug 2024 - May 2026*
- Relevant Courses: Analysis of Algorithms, Informational Retrieval and Search Engines.

Bannari Amman Institute of Technology, Anna University — *Erode, TN, India*
Bachelor of Engineering in Computer Science and Engineering | CGPA: 9.65/10 | 2nd/240 students — *Aug 2018 - May 2022*
- Relevant Courses: Data Structures, Design and Analysis of Algorithms, Software Engineering, Operating Systems, Software Testing.

SKILLS

Languages & Databases: C, C++, GoLang, Python, HTML, CSS, Javascript, MySQL, PostgreSQL, MongoDB, SQL, Terraform
Tools: Docker, Kubernetes, Openshift, Grafana, Prometheus, Git, Jira, Redis, CI/CD - Azure DevOps, Jenkins, Github Actions, DBeaver
Technical Skills: Microservices, AWS, FullStack, Software Engineering, Cloud Computing, Agile & DevOps Methodology, Linux, NATs

PROFESSIONAL EXPERIENCE

Software Development Engineer — *Bengaluru, KA, India*
CSG Systems International — *Jul 2022 - Jul 2024*
- Led research and development efforts for Ascendon Rating and Charging (ARC), a Next Generation Telecom cloud-native SaaS product designed to help clients like Google Fi, Vodafone, and Airtel implement real-time online charging functionality.
- Designed and developed 5G microservices in Golang and Python with PostgreSQL to handle the policy charging and rating of 10 million users' profiles with 5G-supported plans, which will process depletion in the subscriber's available entitlement balance in real-time.
- Spearheaded the creation of a highly scalable microservice for data management systems, utilizing Python, Go, AWS S3, and Kinesis Firehose to stream call-detailed records (CDRs), improving efficiency by 80% and reducing operational costs by $10,000 per quarter.
- Transitioned Go-based 4G (Diameter) and 5G (nCHF) microservices from AWS cloud-dependent solutions to cloud-agnostic services, deployable on Kubernetes/OpenShift across any cloud or on-premise platform, eliminating code residency dependencies.
- Developed and deployed 20+ RESTful APIs in Golang, reducing response times by 30% through optimized logic and improved concurrency management. Automated tasks with AWS Lambda and SNS, enhancing DevOps monitoring with Prometheus and Grafana.

Software Development Engineer Intern — *Bengaluru, KA, India*
CSG Systems International — *Dec 2021 - Jul 2022*
- Developed a Go-based transformation tool to perform data migration on legacy data sources, cutting task execution time by 60%.
- Integrated VoLTE real-time call authentication and authorization in 4G microservices using Golang, hosted via AWS Route53, ECS Fargate, and EC2 instances. Leveraged Redis cache for session retrieval and reducing latency by 20% for MVNOs like BillionConnect.
- Contributed to CI/CD pipelines, DevOps monitoring, documentation, code reviews, and E2E testing, reinforcing overall system stability.

Software Development Engineer Intern — *Emden, NI, Germany*
HyperWork — *Aug 2021 - Nov 2021*
- Designed and developed backend features for ReflectSecurity, a cybersecurity startup, utilizing HTML, CSS, Javascript, MySQL, AWS Cloud Formation, IAM, Go, and Python for API design, database migrations, and server performance profiling.
- Configured a performance and fault monitoring system, optimizing resource usage by 23% by identifying redundant processes.
- Achieved 40% faster data retrieval by optimizing queries and enhancing the access layer in Python, improving efficiency and scalability.

PROJECTS AND PATENT

Web Crawler & Inverted-Index creation: *[Python]* — *Sept 2024 - Oct 2024*
- Built a spiderbot-based web crawler to recursively navigate and scrape large-scale internet news sites.
- Implemented a pipeline between the crawler and website preprocessor and Created inverted-indexes from extracted data.

Soldier Strap: *[AWS IoT | Python | LoRa | ESP32 | MQTT]* — *Aug 2021 - Nov 2021*
- Developed a cloud-based monitoring system to track soldiers' vital signs and location using AWS IoT without internet dependency.
- Implemented a LoRa mesh routing algorithm for extended range and peer-to-peer SOS communication, optimizing with MQTT.
- Adapted the project for women's safety applications in network-deprived areas and published a **patent** (Application No. 202141025203).

WashBot: *[AWS Lambda | TensorFlow | Flask | Docker | VGG19]* — *Apr 2020 - May 2020*
- Built an automated hygiene monitoring platform using computer vision and machine learning (VGG19) on AWS Lambda to guide users through WHO hand hygiene protocols, integrating a Flask API for real-time gesture recognition in Docker for scalability.
- Secured **$7000** from the Derbi Foundation to enhance cloud infrastructure and advance the platform's commercial potential.