AKASHPRABU ATHIKOMBAI CHANDRASEKARAN

LinkedIn | athikomb@usc.edu | akashprabu.netlify.app | +1 (747) 274-7847 | GitHub

EDUCATION

Master of Science — **University of Southern California** — *Los Angeles, CA, USA* — ***08/2024-005/2026***

- Major in Computer Science
- Relevant Coursework: Analysis of Algorithms, Informational Retrieval and Search Engines.
- Independent Courses: CISCO CCNAv7, Cloud Computing *(UIUC-Coursera),* BeADevOpsPro *(iNeuron)*.

Bachelor of Engineering — **Bannari Amman Institute of Technology** — *Erode, TN, India* — ***08/2018 - 05/2022***

- Major in Computer Science and Engineering | CGPA: **9.65/10** | **2nd/240** students.
- Relevant Courses: Data Structures, Design and Analysis of Algorithms, Software Engineering, Operating Systems, Software Testing.

SKILLS

- C | C++ | GoLang | Python | HTML | CSS | Javascript | Docker | Kubernetes | Terraform | MySQL | PostgreSQL | MongoDB | Git | Trino
- AWS | Openshift | Redis | CI/CD Tools - Azure DevOps | Nats | Grafana | Prometheus | Linux | DBeaver | Minio | Postman | VS Code
- Microservices | Fullstack | Cloud Computing | DevOps Methodology | English, Tamil – *All professional proficiency or above*

PROFESSIONAL EXPERIENCE

Software Development Engineer Grad — **CSG Systems International** — *Bengaluru, KA, India* — ***07/2022 - 07/2024***

- 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** to handle the policy charging and rating of 10 million real-time users's 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 **Go**, **AWS S3**, **Minio**, and **Kinesis Firehose** to stream call detailed records (CDRs), improving efficiency by 80% and reducing operational costs by $10,000 per quarter.
- Leveraged **PostgreSQL** to design and implement robust data management backend services for microservices, ensuring data integrity and efficient data manipulation. Enhanced internal tools to boost performance and reliability across the stack.
- 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.
- Automated repetitive operational tasks using **AWS Lambda, SQS, SNS**, and **cron jobs** in **K8s** while enhancing DevOps monitoring with **Prometheus** and **Grafana**. Improved metrics saved approximately 12 manual hours per week and streamlined alerting processes.

Software Development Engineer Intern — **CSG Systems International** — *Bengaluru, KA, India* — ***12/2021 - 07/2022***

- 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.
- Orchestrated the initiation of **Docker** and AWS storage services like **DynamoDB** to optimize the backend infrastructure and data retrieval.
- Contributed to **CI/CD** pipelines, DevOps monitoring, documentation, code reviews, and E2E testing, reinforcing overall system stability.

Software Engineer Intern — **Hyperwork** — *Emden, NI, Germany* — ***08/2021 - 11/2021***

- Designed and developed backend features for ReflectSecurity, a cybersecurity startup, utilizing **HTML**, **CSS**, **Javascript**, **MySQL**, **AWS Cloudwatch**, **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.

MLOps Intern — **TheSmartBridge** — *Hyderabad, TG, India* — ***05/2020 - 06/2020***

- Developed a config-driven end-to-end testing utility using **Terraform**, covering critical edge cases for cloud infrastructure.
- Identified and resolved design flaws in data models and infrastructure, enhancing system performance through creation of key metrics.
- Integrated an image segmentation model into a cloud-deployed product, using **Triton** and **IBM Cloud** to deliver the model as a service.

PROJECTS AND PATENT

- **Soldier Strap:** [*Arduino | Mesh Algorithm | GPS, Lora SX1278, ESP32, MAX 30100 and MLX90614 sensors | 0.96 inch OLED Display*]
  Developed a hand-worn device that monitors soldiers' vital signs and location, sending signals to a base station without internet access. It forms a mesh network with other devices to expand range and broadcast SOS alerts. Adapted this project for women's safety in non-network areas. Filed and published a patent (Application No. 202141025203).
- **WashBot:** [*Ultrasonic and camera with Infrared sensor | Solenoid valve | Actuators | 7-inch OLED display| Microprocessors | VGG19 model*]
  Developed an automated handwash monitoring device that tracks hand gestures and assists users per WHO guidelines. Alerts users if the procedure is incorrect. **Awarded USD 7000** funding from the Derbi Foundation.