

CHANDAN MONABOLU NARAYANA

Athens, GA

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Education

The University of Georgia, Athens, GA

Master of Science in Computer Science

August 2023 – Present

GPA: 3.88/4

REVA University, Bangalore, India

Bachelor of Technology in Electronics and Communication Engineering

August 2017 – June 2021

CGPA: 8.67/10

Professional Experience

The University of Georgia

July 2024 – Present

Web3 Research Assistant — Python, RabbitMQ, Celery, Erasure Coding, IPFS, MQTT, CockroachDB

Athens, GA

- Collaborating with Intel on developing a Decentralized Zero-Trust IoT Data Infrastructure, integrating security with scalable solutions for IoT applications.
- Engineered Web3DB, a decentralized and distributed database using IPFS, improving data accessibility and integrity.
- Consolidated RabbitMQ and Celery into the Web3DB, reducing response time by 30% and enabling real-time data processing, thereby significantly enhancing system efficiency and scalability.
- Embedded MQTT and REST API for real-time IOT communication, enabling efficient data publishing and retrieval.
- Incorporated blockchain technology for secure data storage and controlled access, safeguarding sensitive IoT information.

TATA Consultancy Services

June 2021 – June 2023

Software Engineer (Full-time) — Python, Flask, SQLAlchemy, REST API, MySQL, HTML, JavaScript

Bangalore, India

- Initiated and established an automated operations platform with distinct user roles (admin, manager, associate), enabling real-time issue tracking, automated reporting, email notifications, and streamlined workflows, resulting in an annual savings of 840+ hours and significantly enhanced the accuracy of issue reporting for testing engineers.
- Programmed and optimized a Flask-based RESTful backend with SQLAlchemy, improving query execution efficiency and reducing API response time by 15%, allowing the system to handle 20% more concurrent user requests.
- Coordinated with front-end developers to achieve seamless integration of Flask-based backend APIs with the user interface utilizing HTML, CSS, and JavaScript
- Architected and maintained a relational database schema using MySQL and MariaDB, optimizing query performance through indexing, connection pooling, and query caching, leading to faster data retrieval and system responsiveness.
- Deployed RESTful APIs following OpenAPI standards, enabling robust API interactions for both web applications and command-line interfaces (CLI). This enhanced usability, automated testing coverage, and user engagement, increasing user satisfaction by 20%.
- Identified and prioritized new feature recommendations by engaging with corporate executives and department managers, resulting in a 15% increase in product functionality based on user feedback.

Skills

Programming Languages: Python, Rust, C/C++, SQL, HTML, CSS, JavaScript

Frameworks/Libraries/Technologies: Flask, SQLAlchemy, Numpy, Pandas, Matplotlib, Git, MQTT, MongoDB, TPM, IPFS, Ethereum, AWS, MySQL, PostgreSQL, Apache Kafka, Apache Flink, MariaDB, RabbitMQ, Celery, CockroachDB, NoSQL

Tools: Docker, PyCharm, Jupyter Notebook, Visual Studio, Postman, Linux

Concepts: Backend Web Development, Data Analysis, Data Structures and Algorithms, Data Security and Compliance, Agile/Scrum, Blockchain, Web3, Cryptography, Erasure Coding

Projects and Research

[ckks-engine](#) | *Rust, CKKS encryption scheme*

December 2024

- Built a Rust crate implementing the CKKS homomorphic encryption scheme for privacy-preserving computations.
- Implemented encrypted arithmetic and string operations to process sensitive data securely.

Secure Software Execution and Licensing Framework | *Python, TPM, Cryptography*

July 2024

- Designed a TPM-based licensing framework for software integrity and security.
- Streamlined RSA key management leveraging in-memory computation of software to mitigate disk-based risks.
- Enforced user authentication, access control, and secure namespace isolation for critical operations.

Leadership / Extracurricular

REVA Coders Club

August 2020 - June 2021

Treasurer

REVA University

- Managed the REVA Coders Club's financial resources, including financial planning, budgeting, and cost tracking.
- Oversaw a crucial part in planning coding contests, workshops, and events with an emphasis on financial factors.
- Collaborated with a team of six club officers and leaders to allocate 1,500 USD for diverse club activities and initiatives

REVA Rotaract Club

December 2018 - June 2021

Event Manager

REVA University

- Led public awareness campaigns to create awareness about COVID-19 and its safety measures.
- Teamed up with other committee members to foster Rotary International's principles and objectives, emphasizing moral leadership and service above self.