Karan Rajendra

Stonybrook, NY | notkaranrk@gmail.com | (631) 974 9590 | https://www.linkedin.com/in/karanr3/ | https://github.com/karan-rk

EDUCATION

Stony Brook University **Stony Brook, New York**
M.S. in Computer Engineering *August 2023 - May 2025*
GPA: 3.84/4.0 **Related Coursework:** Advanced Algorithms, Computer Networks, Robotics and Computer Vision

Visvesvaraya Technological University **Bangalore, India**
B.E. in Computer Science *August 2017 – August 2022*
GPA: 6.42/10.0 **Related Coursework:** AI & ML, Database Systems, Data Mining & Analysis, Product Design & Strategy

EXPERIENCE

Impavid Technologies **Bangalore, India**
Software Developer *September 2022- April 2023*

- Developed a **full-stack web application** using **JavaScript, HTML, CSS (Front-end)** and **Node.js, Express, MongoDB (Back-end)**, reducing **page load time by 30%**.
- Designed and optimized **RESTful APIs**, improving data retrieval speed by **25%** and reducing server response time.
- Refactored front-end architecture with **modular React components**, accelerating development cycles by **40%**.
- Implemented **authentication and user management** using **JWT & OAuth**, enhancing security and reducing unauthorized access risks. Integrated **MongoDB and MySQL** for structured and unstructured data handling, optimizing database queries by **20%**.

TechCiti Software **Bangalore, India**
Software Developer Intern *October 2020- December 2020*

- *Developed a **JavaScript-based payroll application** using **React.js (Frontend)** and **Node.js/Express (Backend)**, reducing load time by **20%** and enhancing user experience.*
- *Designed and implemented a **MySQL database schema** for payroll processing, improving data accessibility by **30%** and streamlining financial reporting. **Optimized SQL queries and indexing**, reducing database retrieval time by **40%** and boosting system performance by **35%**.*
- *Integrated **REST APIs** for automated payroll data management, improving processing efficiency and accuracy.*

Stony Brook University **Stony Brook, New York**
Graduate Teaching Assistant *August 2024 – December 2024*

- Conducted **weekly coding sessions** for 40+ graduate students, providing guidance on **Python, OpenCV, and Machine Learning** concepts.
- Designed programming assignments and projects in **computer vision**, improving student understanding of **image processing and object detection**.
- Evaluated and debugged student code, providing structured feedback to improve efficiency and best practices in Python development.

ACADEMIC PROJECTS

Infectious Disease Simulation Model (C++, OOP, Data Structures) **Stony Brook, New York** *August 2023 – December 2023*

- Developed a high-performance disease spread simulator in **C++**, processing 300,000+ agents with an optimized **O(n log n)** approach. Designed a modular system **using Object-Oriented Programming (OOP**) principles, enabling flexible epidemic modeling **(SIR, SEIR**).
- Integrated real-time visualization tools in Python, enabling trend analysis for different outbreak scenarios.

COVID-19 Detection from X-Rays (Deep Learning, CNN, Python, Flask) **Bangalore, India** *January 2022 – August 2022*

- Built a **deep learning model using CNNs (TensorFlow)** to classify **COVID-19 from chest X-rays**, achieving **98.7% accuracy**. Compared performance of **Inception V3, DenseNet121, and ResNet50**, optimizing hyperparameters for better results.
- Deployed the model using **Flask API**, enabling real-time X-ray image analysis with **sub-second inference time**.

Bus Ticket Management System Development. **Bangalore, India** *August 2020 - November 2020*

- Developed a **scalable ticketing system** using **PHP and MySQL**, handling **100,000+ bookings** across **15+ routes**. Integrated **QR-based ticket verification** and **automated payment processing**, improving security and transaction efficiency.
- Optimized **database queries and indexing**, reducing ticket lookup time by **40%**.

SKILLS

- **Programming Languages: Python, Java, JavaScript, C++, SQL, PHP, HTML/CSS**
- **Frameworks & Libraries: React.js, Node.js, Express.js, Django, Flask, Keras, OpenCV**
- **Databases: MySQL, PostgreSQL, MongoDB**
- **Tools & Platforms: Git, Docker, AWS (S3, Lambda, EC2), Kafka, Linux, CI/CD (Jenkins, GitHub Actions)**