ANURAG BAMBARDEKAR

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EDUCATION

M.S. Electrical & Computer Engineering – **Rutgers University, New Jersey** Sept '22 – May '24
Relevant Courses: *Computer Architecture, Machine Learning, Software Engineering, Data Structures & Algorithms* **GPA:***3.92/4*

B.E. Electronics & Telecommunication Engineering – **University of Mumbai, India** Jun '16 – Oct '20
Relevant Courses: *Microprocessors & Microcontrollers, Communication Networks & Systems, Wireless Networks* **GPA:***8.47/10*

EXPERIENCE

Teaching Assistant – **Rutgers University, New Jersey** Jan '23 – Current
- Exhibited Computer Architecture & Digital Logic Design expertise, and contributed to course refinement efforts.
- Proposed 3 new modules in weekly meetings, boosting student engagement by 20% and assessment effectiveness by 15%.

Technical Advisor – **WINLAB, New Jersey** May '23 – Aug '23
- Guided and mentored a diverse summer internship hosting 79 students - revealing a breadth of impactful projects highlighting program's reach.
- Led initiatives in cutting-edge areas such as distributed file systems, 5G wireless, AI security, and IoT robotics, yielding 10 impactful projects.
- Enabled experiential learning, achieving an 80% project completion rate and elevating participants' technical proficiency by 30% and empowering them to confidently tackle complex challenges with 60% expressing increased confidence.

Junior Technical Consultant – **Encora Innovations Labs, India** Oct '21 – May '22
- Developed and deployed microservices solution at DHL for real-time logistics, driving a 20% efficiency boost , employing Python, MySQL, and React.js.
- Implemented secure JWT authentication and WebSockets for real-time data, resulting in a 30% data latency reduction, and created RESTful APIs for seamless CRUD operations
- Orchestrated Docker and Kubernetes deployment, achieving a 50% resource reduction and also an improvement in system uptime.

PROJECTS

Media Conversion Microservices (GitHub) Sept '23
- Orchestrated a robust microservices architecture, deploying 4 services on Kubernetes, achieving 99.9% uptime and enabling 24/7 video-to-MP3 conversion.
- Implemented JWT-based authentication, enhancing user data security, and dynamically scaled service replicas, reducing response times by 30% during peak usage.
- Automated Docker image creation, resulting in a 20% reduction in deployment time. Proposed GitHub Secrets usage for enhanced security and SMTP integration to streamline user notifications.

Urgent Care Management System (GitHub) Sept '22 – Dec '22
- Developed a healthcare solution automating processes and optimizing appointment scheduling, resulting in a 25% reduction in patient wait times and enhanced scheduling accuracy.
- Designed a dynamic platform encompassing key functionalities: patient registration, appointment scheduling, automated billing, and real-time doctor availability and patient status search.
- Architected a MySQL-on-AWS backend (JavaScript, Node.js, Express), API testing on Postman, and integrated Twilio for immediate SMS alerts, enhancing patient attendance and healthcare efficiency. Role-based access bolstered system security and usability.

Real Time Analysis of Surveillance Camera Jun '19 – Oct '20
- Employed facial analysis, object detection, and motion tracking algorithms to enhance security measures in a real-time video surveillance feed using OpenCV and TensorFlow.
- Utilised Faster R-CNN achieving 90% accuracy in detecting objects, including weapons & unattended bags. Explored YOLOv3, ResNet SSD, and CNN for object recognition. Researched occlusion detection and advanced human pose estimation techniques to enhance overall system capabilities.
- Publication: "Real-time Analysis of Video Surveillance using Machine Learning and Object Recognition" in IRJET, Vol 7 Issue 2, 2020.

IoT Medicine Vending System Feb '19 – Mar '19
- Engineered a PIN-authenticated, RFID-enabled medication dispensing system, streamlining medication retrieval for patients. Integrated various hardware components, including microcontrollers, RFID readers, keypads, and more, to create a complete dispensing solution.
- Designed an intuitive interface for doctors to manage prescriptions, stored on Google spreadsheets. Minimized errors, improved record-keeping, and enhanced accessibility to rural areas.
- Awarded Second Prize at the National Level IoT Challenge 2019. Demonstrated scalability potential and positive impact by seamlessly integrating hardware components and cutting-edge technologies.

SKILLS

Coding Languages: Python, Javascript, Java, C++, C, Shell, CSS, HTML
Databases: MySQL, MongoDB, Amazon RDS
Frameworks: Django, React.js, Flask, Bootstrap, Spring Boot, Express.js
Tools & Libraries: VSCode, vim, git, Powershell, Postman, Node.js, Figma, ROS, Docker, Kubernetes, RabbitMQ, GraphQL, Arduino, WireShark, ROS, SimpleScalar, Amazon Web Services, Azure, LaTeX