Deepak Vagish

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EDUCATION

Rutgers University, New Brunswick, USA **August 2022 – May 2024**
Master of Science in Computer Science
SASTRA University, Thanjavur, India **July 2015 – June 2019**
Bachelor of Technology in Information and Communication Technology

TECHNICAL SKILLS

- Languages: Python, Java, C, C++, MATLAB, SQL, JavaScript, HTML, CSS
- Tools & Frameworks: REST APIs, Django, Flask, Git, Docker, Kubernetes, NumPy, pandas, Scikit-learn Vim, VS Code, Agile, CI/CD
- Cloud & Databases platforms: PostgreSQL, MySQL, AWS (S3, EC2, Lambda, RDS)

PROFESSIONAL EXPERIENCE

Netrin Sports Technologies, Chennai, India
Software Intern **June 2023 – Aug 2023**
- Contributed to the core of backend infrastructure by designing and deploying robust APIs using Flask that efficiently managed over 500 daily requests
- Improved production code efficiency by optimizing algorithms and automating critical test cases, resulting in a 15% increase in overall system performance

Acrophase, IIT Madras, Chennai, India
Software Engineer **Sept 2021 – July 2022**
- Redesigned the internal dashboard using Django, integrating real-time data updates and a user-friendly interface, which reduced downtime by 60% and allowed for seamless integration of new features
- Reviewed 100+ pull requests, identifying and addressing critical bugs before they reached production. Provided valuable feedback that greatly improved code readability and efficiency
- Mentored and onboarded new SDEs, providing technical guidance and knowledge sharing sessions enhancing their coding proficiency and project contributions.

Healthcare Technology Innovation Centre, IIT Madras, Chennai, India
Project Engineer **May 2021 – Aug 2021**
- Created REST APIs using Flask for the data analytics team, allowing data visualization and reporting
- Streamlined ECG file processing by leveraging deployment on AWS ECS with S3 integration, cutting processing times by 40% and significantly enhancing scalability for user operations.

Project Associate **June 2019 – April 2021**
- Developed asynchronous task processing with Celery, improving the handling of background jobs and reducing response times for user-facing operations
- Prepared automation scripts to generate athlete session reports reducing the manual efforts of the Ops team by 85%

ACADEMIC PROJECTS

Agent Navigation
- Implemented repeated and adaptive A* algorithm with inferential knowledge base to direct the AI agent from the source node to the goal node in an unknown grid with obstacles.
- Simulated agents with different sensing, seeing and inference abilities on grids of different densities and compared them using metrics like number of obstacles encountered, number of cells processed, etc.

Online Auction System
- Spearheaded MySQL database design for an online auction system. Optimized data storage and retrieval for auction listings, user accounts, and bids. Ensured seamless connectivity with Java and JavaScript components for efficient system operation.
- Developed user-centric features including customizable search, bid alerts, and comprehensive auction history. Implemented automated bid increments and user anonymization for improved bidding process and privacy protection.

Video Colorization
- Implemented Conditional GANs to add RGB color channels to grayscale videos. Developed a generator network to produce colored images and trained a discriminator to differentiate between real and generated colored image, enhancing image quality and realism.
- Utilized a UNET architecture for pixel-wise regression tasks in image colorization. Ensured color consistency using Lab* color space representation

PUBLICATIONS

- Co-authored a research paper titled "Lifestyle Assessment of Large-Scale Populations using Repose: A Heart Rate Variability-based Lifestyle Assessment Platform." Serious Games and Applications for Health (SEGAH), December 2022 - DOI
- Deepak K, Rajakumaran C, Kavitha R. 'Chaos Based Encryption of Quantum Images.' Multimedia Tools and Applications, Volume 79, No. 33-34, June 2020, pp. 23849-23860 - DOI