Shambhuraj Wadghule

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Education

BS in Computer Science (Honors), Minor: Mathematics and Statistics, GPA: 3.6 December 2022

Purdue School of Science, IUPUI ⊡

Dean's List, Scholar's List

Recipient of Highly Prestigious Chancellor's Scholarship, Recipient of Mentoring Scholarship by Department of Mathematics, IUPUI.

Relevant Coursework: Data Structures and Algorithms, AI, Database Systems, Operating Systems, Software Design, Advance Calculus, Differential Equations, Cloud Computing, Data Science, Theory of Computation, Compilers Design, Algorithms, Parallel Computing, Computer Networking

Professional Experience

Institute for Engaged Learning, IUPUI ⊡ 2019/06 – 2022/12 | Indianapolis, Indiana

Undergraduate Research Assistant, Web Developer

- Led a training and tutorial team of 5 students in the development of 4 Virtual Reality Modules for the Additive Manufacturing curriculum at Purdue School of Engineering and Technology.
- Worked in a multidisciplinary environment to collaborate with students to achieve high efficiency in projects.
- Published 2 research papers for the work and submitted 2 papers for review. Presented the research work at several conferences.
- Collaborated with 3 different MURI research teams to understand the needs and requirements to showcase the research work effectively on a website.

Monkeybar Education Private Limited ⊡ 2022/08 – 2022/10 | Remote

Software Development Associate

- Oversaw app and website development and fulfilled application demands overlayed by the co-founders.
- Discussed, enhanced, and embedded required functionality with app developers.
- Participated in the conception of the platform-independent application idea in order to provide a learner-friendly app to over 25000 consumers.
- Developed the prototype for the application in Figma single-handedly, summing all the criteria.
- Assisted with app development with Flutter framework to achieve platform independence by utilizing MySQL as a database and hosting the app on AWS.

Viasat Inc. ⊡ 2022/05 – 2022/08 | Carlsbad, California

Software Engineer Intern - Full Stack

- Established backend API and frontend web app to create a full stack application in the End User Experience team at Viasat in an Agile/SCRUM software development environment using JIRA.
- Utilized Javascript on both ends of the stack, Django with ORM features, and jQuery for web page behavior.
- Designed the web application (including UI/UX), taking advantage of ReactJS, jQuery, and Django REST framework.
- Migrated from Grafana to ChartJS for data visualization and analysis. Handled ER design and schema development single-handedly through incremental PostgreSQL migrations.
- Containerized the application using Docker to break down components into microservices and used development containers to speed up the continuous integration aspect.

Leadership

Computer Science Teaching Assistant | Department of Computer Science, IUPUI 2022/01 – 2022/05 | IUPUI, IN

- Held weekly recitation classes for tutoring to help students meet the homework requirements.
- Arranged for struggling students to receive one-on-one coaching and doubt-clearing sessions in order to enhance their academic performance.
- Carried out achievement-based grading to guarantee fair grading and feedback to assist students in overcoming technical obstacles.
- Designed assignments and administered in-class quizzes to assist the professor.

Vice President | Cybersecurity Club @ IUPUI
2021/12 – 2022/05 | IUPUI, IN

- Increased membership by 125% through organizing new events such as CTF challenges, lock-picking events, and alumni recruiting events.
- Sourced 5+ alumni to serve as mentors to club members through red-teaming challenges, technical workshops, and other professional activities.
- Developed and managed a daily cybersecurity newsletter distributed to 200+ club members and faculty.

Math Grader | Department of Mathematical Science, IUPUI
2021/08 – 2022/12 | IUPUI, IN

- Enhanced student learning by optimizing various instructional approaches and innovative classroom sessions.
- Held office hours at Mathematics Assistance Center (MAC) at IUPUI, tutoring 20+ students concurrently.
- Incorporated a growth mindset approach and proactive behavior modification techniques to lead students to understand complicated mathematical concepts.

Projects

Portfolio Website | Django, Docker, GitHub Actions, GraphQL ⊡
2022/11 – Present

Personal Portfolio Website

- Designed and developed a website to showcase independent projects using the Python Django framework.
- Built a CI/CD pipeline for the application using GitHub Actions.
- Containerized application using Docker through automation, with deployment on Python Anywhere Cloud service.
- Modularized the web page creation using the GraphQL API standard to perform CRUD operations in data and Django's ORM and MVT features.

Exercise Tracker | ReactJS, NodeJS, MongoDB, ExpressJS, Heroku, Insomnia, GitHub ⊡
2022/01 – 2022/02

Exercise Tracking Full Stack Web Application

- Developed a MERN stack application and retrieved user data from MongoDB NoSQL database to analyze and process it in the app's functioning with increased scalability and functionality.
- Successfully created a REST API with Postman as a testing tool to test the CRUD functionalities.
- Hosted the app on Heroku service and GitHub Pages for flexibility in production to allow for convenient integration and deployment. Upgraded deployment with GitHub Actions and Docker containerization.

Command line Calculator App | Software Design, SOLID Principles, DSA, Git, OOP ⊡
2021/10 – 2021/12

Software Design Command Line Calculator App

- Implemented software design techniques by redesigning the calculator app to ensure performance and optimality.
- Incorporated SOLID principles and software design patterns to curate the application and isolate variability.
- Demonstrated the real-world system design aspects by exhibiting highly cohesive nature modules with minimum coupling.

Skills

Programming Languages: Python, C/C++, Java, JavaScript, C#
Frameworks: Django, Flask, React, Express, jQuery, NodeJs (Runtime)
CI/CD: Docker, Kubernetes, Jenkins, GitHub Actions
DVCS: Git, GitHub, GitLab
Database: SQLite, PostgreSQL, MySQL, MongoDB, Redis
Web API: REST API, GraphQL (w/ Graphene), Postman/Insomnia
Cloud/Deployment: AWS (S3, EC2, ECR, ECS), Heroku, Python Anywhere
Test Driven Development: PyTest and Unittest Framework
Agile/SCRUM Development
Other: Apache2, Nginx, gUnicorn, Grafana, PTC Creo, Solidworks, Unity, 3DS MAX & Interactive, Matlab

Publications

- "Virtual Reality Module for Additive Manufacturing Curriculum," in 2020 Illinois-Indiana Section Conference Proceedings, Indianapolis, Indiana, USA, 2020, pp. S900-1. ⊡
- Developing a Virtual Reality Module to Improve the Student Learning Experience in an Additive Manufacturing Curriculum Paper presented at 2020 ASEE Virtua ⊡