

SHUBHAM DESHMUKH

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EDUCATION

Virginia Polytechnic Institute and State University

Masters in Computer Science - GPA: 3.72/4.0

- Relevant Coursework: Intermediate Data Structures and Algorithms, Software Engineering, Cloud Computing

Vishwakarma Institute of Technology

BTech in Electronics and Telecommunications - GPA: 8.9/10.0

Falls Church, VA

Aug 2023 – May 2025

Pune, India

Aug 2018 – May 2022

EXPERIENCE

Graduate Research Assistant

Virginia Tech - A3 Lab - Commonwealth Cyber Initiative

Aug 2024 – Present

Arlington, VA

- Developed and optimized **deep learning models** in **PyTorch** with **CUDA acceleration**, achieving **$R^2 = 0.89$** in **water quality prediction**.
- Proposed a novel **image processing pipeline** for **50,000+ USGS images**, integrating segmentation, daytime filtering, and water coverage thresholding, reducing computational overhead by filtering **40%** of irrelevant images.
- Enhanced a **U-Net segmentation model** to remove **atmospheric interference** from **surface water quality** datasets, improving **classification accuracy** by **20%**.

Software Developer Intern

J. Craig Venter Institute

Jun 2024 – Aug 2024

Rockville, MD

- Implemented **D3.js** and **React** to enhance **HSP 3.0 data visualization**, improving researchers engagement by **40%**.
- Optimized **data pipeline** using **Python, R, Docker, and AWS (Lambda, S3)**, reducing manual intervention by **70%**.
- Enhanced **API queries**, boosting **database efficiency** and significantly decreasing **data processing time** by **20%**.

Software Developer

Wipro Ltd.

May 2022 – Jul 2023

Pune, India

- Led development of **10+ enterprise applications** using **ASP.NET Core**, ensuring **100% on-time delivery** and enhancing system scalability.
- Administered **Tableau Server**, optimizing **analytics** data workflows and reducing **report generation time** by **15%**.
- Resolved **42+ Retail POS issues**, boosting **uptime** by **20%** and refining **transaction up time** and **reliability**.

Data Science Intern

IFM Engineering Pvt. Ltd.

Aug 2021 – Jan 2022

Pune, India

- Developed a **real-time patient monitoring system** using **YOLOv4-tiny**, and **Mediapipe** attaining **95% accuracy**.
- Integrated **deep learning models** and **Flask Web app**, mitigating **operational issues** by **30%** and improving efficiency.
- Presented research on **real-time patient monitoring** at **IEEE MysuruCon 2022**, demonstrating a **15% reduction** in **patient response time** through optimized alert mechanisms.

PROJECTS

React Portfolio | [Github](#) | *React, JavaScript, HTML, CSS*

Aug 2024 – Sep 2024

- Constructed a **React** and **CSS**-based personal website featuring a blog and interactive project gallery, emphasizing modular components and responsive design.
- Implemented **React Router** for seamless navigation and deployed the site using **GitHub Pages** for global accessibility.
- Optimized performance with **lazy loading** and styled the interface using **CSS3** for a polished, user-friendly design.

Human Salivary Proteome | [Github](#) | *React, D3.js, Docker, AWS Lambda*

Jun 2024 – Aug 2024

- Played a major role in the development of a bioinformatics web application using **React** and **D3.js**, enabling intuitive visualization of complex **Salivary Proteome datasets** for **bioinformatics research**.
- Engineered interactive **heatmaps** and **density plots** using **D3.js**, enabling users to identify critical data clusters **60%** faster and accelerating analysis workflows by three hours.
- Rectified **15+** merge conflicts through **Git**, leading to zero integration errors and a **20%** reduction in code deployment failures throughout the **HSP 3.0** web application project.

TECHNICAL SKILLS

Programming Languages: Python, JavaScript (TypeScript, Node.js), C, C++, C#, Java, SQL, Bash

Web Technologies: React, D3.js, Vue.js, Nuxt.js, HTML, CSS, REST APIs

Backend Development: Flask, FastAPI, Django, .NET, Node.js

Databases: PostgreSQL, DynamoDB, MySQL, MongoDB

Cloud & DevOps: AWS (Lambda, S3, DynamoDB, EC2), Docker, Terraform, CI/CD

Developer Tools: Git, GitHub, GitLab, VS Code, PyCharm, IntelliJ, Postman, JIRA

Machine Learning: PyTorch, TensorFlow, scikit-learn, OpenCV, Pandas, NumPy, Matplotlib, Selenium

Additional Skills: Debugging, Unit Testing, API Development, Agile (Scrum), Object-Oriented Programming (OOP)