Dev Patel

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Education

University of Florida	Aug. 2022 - May 2024
Master of Science in Computer Science; GPA: 3.8 / 4.0	Gainesville, FL, United States
Dharmsinh Desai University	Aug 2018 - May 2022
Bachelor of Engineering in Computer Engineering; CGPA: 8.9 / 10	Gujarat, India

Relevant Courseworks: Advanced Data Structures, Mathematics of Intelligent Systems, Analysis of Algorithm, Machine Learning, NLP, UI/UX, Programming Language Principles, Computer Vision, Distributed Operating systems

Experience

- **Research Assistant (SMILE Lab)** | *University of Florida, Gainesville, FL* — Dec 2024 - Present
  - Deployed **GRACE** and **DOMINO**, state-of-the-art brain image segmentation models, using Flask and Next.js, reducing processing time by 35% in clinical settings; programmed CLI tools to enable scalable batch inference workflows.
  - Trained and evaluated multiple deep learning architectures (**ResNet**, **AlexNet**, **Xception**, **Inception**) for an Explainable AI project, improving model interpretability by 25% and enhancing diagnostic reliability in neuroimaging.
  - Analyzed multimodal cohort data (**OASIS, ADNI**, etc.), integrating imaging and clinical features for **MCI/CN/AD** classification; implemented automated logging, monitoring, and hyperparameter tuning, reducing segmentation errors by 15% and support overhead by 40%.

- **Software Developer** | *Indian Institute of Technology Bombay, Mumbai, India* — Dec 2021 - May 2022
  - Designed a comprehensive **feature-rich Android & iOS application** using **Flutter & Swift** and integrated **Firebase** for real-time **data synchronization**. The app enhances the learning experience & teaching processes across **three distinct languages**, Hindi, Marathi and Sanskrit, encompassing a vast **vocabulary of over 50,000+ words**.
  - Created & optimized **a search index** over the extracted words using **Python and MySQL**. Also fine-tuned the schema, incorporating an **audio-visual layer**, resulting in a reduction of search time by **30%** & an increase in interactivity.
  - **Extracted information on words** with constraints such as proficiency, class, sense, definition, and version from more than 4 different **multi-lingual corpuses** developed and maintained by the **Shabdamitra** team at the IIT Bombay.
  - Utilized **Python and SQL** to implement **machine learning algorithms** for **predictive text** and **language learning insights**, further augmenting the educational utility of the application.

- **Data Analyst** | *Saint Louis University x GlobalShala, Remote* — Oct 2021 - Dec 2021
  - Employed advanced data visualization tools **Tableau and Power BI** and **statistical software R** to **analyze extensive marketing data** from sponsor's advertising campaigns. Focused on uncovering key observations and identifying actionable insights to assist the Finance team in **strategic decision-making**.
  - Calculated a **low click through rate** of 1.2%, **conversion rate** of 3%, and **Return on ad spend** of $4.50.
  - **Overhauled the marketing budget** and improved campaign effectiveness by recommending the **removal of underperforming ad campaigns** which ultimately led to a significant enhancement in the campaign effectiveness.

- **Software Developer** | *Bharat Tyres Pvt. Ltd, Anand, Gujarat, India* — Sep 2020 - Sep 2021
  - Pioneered and deployed a **scalable microservices architecture** using **Next.js, React, and Node.js** on **AWS**, leveraging EC2, Load Balancers, and **PostgreSQL on AWS RDS** to optimize database queries and caching mechanisms, reducing API latency by 40% and enhancing system responsiveness.
  - Engineered a robust **authentication and authorization** mechanisms using **JWT and OAuth 2.0**, enhancing API security, preventing unauthorized access, and ensuring seamless user management across microservices.
  - Spearheaded the **CI/CD pipeline** implementation with **Docker & Kubernetes**, automating workflows & ensuring seamless **zero-downtime updates**, which improved deployment efficiency & **reduced downtime by 30%.**

Projects

- **Cache Up** | *MCP, Python, FastAPI, Next, Postgres*
  - Built **Cache-Up**, a platform delivering concise tech news summaries using **MCP (Model Context Protocol)** to integrate with **Pinecone** for vectorized tag search; constructed frontend with **Next.js** and **Tailwind CSS**, and the backend in **Python (FastAPI)**, released via **Vercel** and hosted on **DigitalOcean** with **PostgreSQL**.
  - Automated content ingestion using a local **Raspberry Pi** to fetch latest posts every 5 minutes; integrated **Sentry** for real-time monitoring, achieving **99.9% uptime** and reducing debugging time by **45%**.

Skills

- **Languages & Frameworks/Libraries:** Python (Flask, Django), Java (Spring Boot), JavaScript/TypeScript (React, Next.js, Node.js), C++, C#, Ruby on Rails, Go, Rust, Flutter, HTML, CSS, SCSS, PyTorch
- **Technologies & Tools:** MCP, Pinecone, Sentry, DigitalOcean, Vercel, AWS, Azure, REST APIs, WebSockets, Figma, Postman, GitHub Actions, CI/CD, MLOps, System Design, Unix/Linux, Nginx
- **Version Control & DevOps:** Git, Docker, GitHub, Jira, Docker Compose
- **Databases & Storage:** PostgreSQL, MySQL, MongoDB, Redis, SQLite, S3, GraphQL