Tilak Patel

Generative AI Intern @ Empowerreg AI
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EDUCATION

Northeastern University **April 2027**
Bachelor of Science Boston, MA

Major: Computer Science & AI Concentration
Minors: Computer Engineering & Robotics
Relevant Coursework: Object-Oriented Design, Graduate Computer Systems, Algorithms & Data, Engineering LLM-Integrated Systems, UX Design

TECHNICAL SKILLS

Programming: Python (Fluent), Java (Fluent), JavaScript (Intermediate), C++ (Beginner)
Web/Frameworks: React, Flask, FastAPI, Material UI, Axios, Tailwind CSS, HTML, CSS
Data/ML: PyTorch, NumPy, Pandas, Matplotlib, Seaborn, Scikit-learn, Generative AI, Large Language Models (LLMs), ChatGPT API, Natural Language Processing (NLP)
AI: Retrieval Augmented Generation, Multi Agent Orchestration, Prompt Engineering, Agentic Design
Tools/Other: AWS, Git, Linux, Bash, Jupyter, Gradle, JUnit, PyTest, Postman, GitHub, Azure, VSCode, WSL, Beautiful Soup, Selenium, Google Maps API, Uvicorn, Virtual Machines, Cloud Computing, Google Colab
Languages: English (C2), Gujarati (C2), Hindi (C2), French (B2)

EXPERIENCE

Generative AI Intern **July 2024 – Present**
Empowerreg AI Seattle, WA

- Engineered production-ready visualizations for Risk Annotation Matrix Product, enhancing data interpretation efficiency
- Integrated Generative AI model data using Pandas, Seaborn, and React.js, significantly increasing analysis speed
- Developed dynamic Risk Assessment Matrix with Material UI, enabling real-time data analysis
- Optimized processing of 1,000+ lines of JSON medical device data using FastAPI, reducing transmission time

Undergraduate Research Assistant **Jan. 2024 – Present**
Mon(IoT)r Lab, Northeastern University Boston, MA

- Automated data collection for privacy research using Python scripts and RESTful APIs
- Enhanced data processing speed through implementation of multithreading techniques
- Conducted comprehensive voice assistant experiments, identifying critical privacy vulnerabilities
- Collaborated on research focusing on user interaction analysis with smart home devices

Software Engineer Intern **June 2024 – July 2024**
GreenTree Capital and Asset Management Boston, MA

- Implemented Auth0 authentication system, enhancing security and streamlining user access
- Developed and maintained robust APIs with comprehensive Postman documentation
- Optimized React.js applications, improving user engagement and reducing bounce rate
- Collaborated on troubleshooting and implementing authentication for a React-based website

PROJECTS

Co-OpSearcher Web App **Jan. 2024 – Present**
Python, Flask, React, Vite, Selenium, ChatGPT API, Tailwind CSS, Framer Motion

- Architected full-stack application to automate internship search using Flask API and React.js
- Implemented React with Vite and Tailwind CSS, significantly improving load times and user engagement
- Integrated Selenium for efficient web scraping and ChatGPT API for intelligent job matching
- Enhanced user experience with Framer Motion animations, improving interface interactivity

Smart Summarization NLP & ML Tool **July 2024**
Python, PyTorch, BERT, Transformers, Google Colab, Seaborn, Matplotlib

- Developed advanced NLP tool using BERT, achieving 6.69% improvement in training loss over 2 epochs
- Optimized data pipeline, processing 287,113 samples to 50,000, reducing training time to 30-45 minutes on Google Colab's T4 GPU
- Implemented PyTorch-based model with mixed precision training and gradient accumulation for 4x effective batch size increase
- Engineered efficient text summarization system capable of generating concise, contextually relevant summaries
- Utilized Hugging Face Transformers library to fine-tune BERT model for summarization task

Personal Portfolio **July 2024**
React, Vite, Framer Motion, Tailwind CSS, Git

- Developed responsive portfolio using React and Vite, achieving optimal performance
- Implemented Framer Motion animations, increasing average session duration
- Utilized Git for version control, implementing branching strategies and CI practices
- Designed modern UI with Tailwind CSS, enhancing visual appeal and user feedback

FloodIt Game **June 2024**
Java, Northeastern Tester Library

- Implemented OOP principles for modular, scalable code structure
- Introduced scalable game settings, allowing players to customize board size and difficulty level for enhanced experience