# Revant Patel

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## Education

**University of California Merced** | *BS Computer Science, GPA: 3.91* Aug. 2024 – May 2028

## Professional Development

**BlueTask** | *React, Node.js, PostgreSQL, Azure*

- **Created BlueTask**, a full-stack, collaborative task management platform designed to enhance productivity with AI-assisted task decomposition and smart planning.
- **Integrated OpenAI's GPT** via Azure OpenAI Service to break down complex tasks, estimate time and difficulty, suggest related actions, and generate intelligent content for improved task execution.
- **Engineered a RESTful API** with **JavaScript (Node.js)** and **Express.js**, enabling secure and validated CRUD operations, and leveraged **PostgreSQL** through **Supabase** for real-time updates and data persistence.
- **Implemented OAuth 2.0 authentication** with Google using Supabase Auth, leveraging built-in providers and row-level security (RLS) to manage access control and protect user data.
- **Developed a responsive UI** with **JavaScript (React.js)**, **Tailwind CSS**, and **Framer Motion**, featuring real-time task syncing, task sharing with permissions, and smart filtering/sorting.
- **Facilitated task collaboration** with invite-based sharing, permission control, and a recently deleted section for recoverable task management.

**ResumeRanker** | *BeautifulSoup, nltk, difflib, Python*

- **Built for SASEHacks@UCM**
  *Click To View Project On DEVPOST*
- **Developed ResumeRanker**, a Python-based AI tool leveraging **Natural Language Processing (NLP)** techniques to perform resume-to-job description compatibility analysis through advanced similarity algorithms.
- **Engineered a Resume Parsing Engine** using **PyPDF2** and **docx** to accurately extract structured and unstructured text data from PDF and DOCX files, ensuring compatibility across various input formats.
- **Implemented Skill Matching Algorithms** utilizing **SequenceMatcher** for similarity scoring and **Custom Synonym Mapping**, enhancing precision in matching relevant technical skills across varied terminologies.
- **Applied NLP Techniques** with **NLTK** for text preprocessing, including tokenization, lemmatization, and keyword extraction, optimizing the accuracy of skill identification from unstructured text data.
- **Designed a Skill Frequency Analysis Module** leveraging **Counter** from the collections library to rank skills by occurrence frequency within job descriptions, identifying critical requirements and enhancing match performance.

**NBA Statistical Predictions Model** | *Python* *Research Project*

- Collaborated with Dr. Adrien Peltzer to develop a predictive model for **NBA game outcomes**, leveraging historical team statistics and point differentials.
- **Engineered** end-to-end **data pipelines** using **pandas** and the **NBA API** for efficient real-time data extraction and preprocessing.
- Conducted extensive **backtesting** on past seasons, analyzing error margins and refining statistical models for improved forecast accuracy.

**Keystroke-Protected Intrusion Detection System** | *Python, Cybersecurity*

- Developed an intelligent background **security monitoring tool** using **Python, threading**, and **pynput** to detect unauthorized usage activity.
- Implemented a keystroke-based unlock system requiring predefined input sequences before enabling any keyboard or mouse interaction.
- Integrated **smtplib** for automatic email alerts on intrusion attempts, improving threat awareness and incident response.
- Optimized runtime efficiency through **multi-threaded architecture**, maintaining minimal system overhead.