VINAY PRABHAKAR

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EDUCATION

Master of Science - Computer Science - GPA: **3.66**/4.0   **May 2025**
Illinois Institute of Technology, Chicago, IL
Relevant Coursework: Deep Learning, Natural Language Processing , Computer Vision , Data Mining, Software Engineering,
Algorithms, Data Structures

Masters in Advanced Architecture - GPA: **3.76**/4.0   **Jun 2020**
Universitat Polit'ecnica de Catalunya, Barcelona, Spain

Bachelor of Architecture - GPA: **3.82**/4.0   **May 2019**
School of Planning and Architecture, New Delhi, India

SKILLS

- **Technologies:** Python, Java, C, C++, SQL, HTML, CSS, JavaScript, Relational DB (MySQL), Vector DB (Pinecone, Chroma), GenAI (LLM)
- **Framework & Libraries:** LangChain, AutoGen, PyTorch, Tensorflow, Keras, NumPy, Pandas, Seaborn, Scikit-Learn
- **Platforms & Tools:** Git, GitHub, Spark, Uizard , Tableau
- **Other:** Statistical Analysis, Predictive Modeling, Data Visualization , Prompt Engineering, Software Testing

PROJECTS

Food & Travel AI Assistant   **Jul 2024**
Collaborative Project - Project Link

- Engineered an **agentic workflow** using **AutoGen**, utilizing an **LLM** to process text (and image) inputs, effectively eliminating the need for manual searches and enhancing user convenience by providing a **single interface** for all food and travel needs.
- Integrated **tool use** (Yelp API) to fetch real-time data, ensuring highly accurate and relevant recommendations, which improved query resolution efficiency by reducing overall time by **50%**.

Vector Search (RAG) Assistant   **Apr 2024**
Independent Learning Project - Project Link

- Employed LangChain to integrate an **LLM** (Google Gemini, GPT) with a **vector DB**, achieved **5 times** faster retrieval with almost a **90%** relevance accuracy, producing structured and coherent responses in natural language.
- Created a user-friendly web interface with **Streamlit** for the application, facilitating seamless access.

Face Expression Detection System   **Mar 2024**
Independent Learning Project - Project Link

- Built and trained a convoluted neural network (CNN) using **PyTorch** with a final overall accuracy of **89%** for smile detection.
- Enhanced model performance by standardizing input data through pre-processing with **OpenCV**.

EXPERIENCE

Architectural Technologist   **Jun 2020 - Jan 2023**
Vspan Architects and Engineers, Bangalore, India

- Automated the manual processing of data for aggregation by creating custom **VBA functions** in Microsoft Excel, reducing task time from **1 hour** to under **5 minutes** and enabling quick and accurate reprocessing with design changes.
- Developed and optimized custom **AutoCAD** scripts using **LISP**, automating complex tasks and improving workflow efficiency by **300%**.
- Leveraged **Rhino3D**, Grasshopper, Ladybug, and **Python** for generative design, improving design accuracy by **30%**.

Co-founding Team Member   **Jan 2020 - Jun 2020**
Startup Incubator Programme, Erasmus + Eu Union

- Spearheaded integration of Shape Diver, a **cloud-based UI**, with **Rhino3D** and Grasshopper, enabling seamless client customization for parametric designs and cutting design iteration time by **75%**.

Architectural Intern   **Jul 2017 - Sep 2017**
Kembhavi Architecture Foundation, Bangalore, India