Deven Patel

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EXPERIENCE

Kai Nest Pvt Ltd   **Gujarat, IN**
Project Manager   *Dec 2024 - Current*

- Defined and drove execution of healthcare platform with openEHR/FHIR interoperability across India, USA, Canada, UK, and France.
- Led refinement of 10+ core workflows including multi-modal chat-bot driven health history/current data capture, goal setting, resource discovery, and clinician-validated AI recommendations.
- Established project foundation by mapping user journeys aligned with global security standards (encryption, audit trails), multi-lingual support (English, Hindi, French, Gujarati, Spanish), and multi-modal inputs (text, audio, imaging, ECG signals).
- Directed modular architecture development featuring Rule Author, Prompt Author, AI Interface, and EHR knowledge graph for personalized wellness/clinical outputs.
- Collaborated with founders and engineering to define API-driven ecosystem and panelist review interface, enabling clinician oversight of AI recommendations and reducing iteration cycles.
- **Technologies:** openEHR, FHIR, Rule/Prompt Author, Agile Framework

Mem0 (pka Embedchain)   **Mountain View, CA**
Founding Engineer   *Oct 2023 - Jan 2024*

- Built an open source Retrieval Augmented Generations (RAG) framework to develop custom GPTs on unstructured data
- The framework is well received by the community with over 40k stars on github `https://github.com/mem0ai/mem0`
- Check out the website at `https://mem0.ai/`
- **Technologies:** Python, AI, LLM, RAG

Youpi Inc.   **Mountain View, CA**
Founding Engineer   *July 2021 - June 2023*

- Managed a team of engineers and product designers in a fast-paced environment, ensuring high-quality and daily releases
- Developed features using generative AI machine-learning models to create personalized portrait images in response to user-provided creative prompts
- Engaged in user interviews to grasp pain-points and devise solutions
- Worked on building a camera-based social media application using Swift
- Applied video transcoding in the backend to reduce video serving size by 80%
- Designed and implemented backend infrastructure using Google Cloud Products and Services
- Check out the website at `https://www.joinrealm.ai/`
- **Technologies:** Swift, Python, Javascript, NodeJs, Google Cloud, Firebase

Deep Learning Lab (DLL)   **University Park, PA**
Research Assistant   *August 2019 - May 2021*

- Collaborated with Civil Engineers on landslide prediction project using remotely sensed images
- Applied data augmentations to reduce class imbalance from the dataset, improving the performance metric by 5%
- Built a feature extraction tool to draw out key attributes of Digital Elevation Maps (DEMs)
- Added DEM information to the encoder of the base model to further improve the accuracy by 10%, reaching 92%.
- **Technologies:** Tensorflow, Python, Google Cloud

Undergraduate Deep Learning Lab (UDLL)   **State College, PA**
Machine Learning Research Assistant   *June 2018 - May 2019*

- Collaborated with Astronomy researchers to build a deep learning model for detecting defects caused by alpha particles in radio telescope images
- Wrote deep neural network model to predict the number of defects in an image to an accuracy of 78%
- Overcoming the challenge of pixel prediction in the dataset, which includes 60% of images with 0 or 1-pixel defects.
- **Technologies:** TensorFlow, Python

D.A.T.A. Labs   **State College, PA**
Undergraduate Research Assistant   *August 2017 - December 2019*

- Improved a Child Safety Game to help low-income/unprivileged parents learn how to keep homes safe for children
- Prepared and filtered data to train a deep neural network model that generates 3D objects from its 2D projections
- Developed end-to-end website for users to capture vitals and download vital data (https://www.videovitals.org)
- **Technologies:** Unity, Django, ReactJS, AWS

KOGENTiX Inc.   **Schaumburg, IL**
Data Engineer Intern   *June 2017 - August 2017*

- Developed distributed applications to solve large-scale processing problems
- Applied MapReduce model to significantly improve data processing time
- Optimized solutions in the cloud deployment model based on modern big data technology
- **Technologies:** Apache Hadoop, MapReduce, Linux, HQL

EDUCATION

The Pennsylvania State University — State College, PA
Master of Engineering in Computer Science | GPA: 3.42 — Graduated: May 2021

The Pennsylvania State University — State College, PA
Bachelor of Science in Computer Science | GPA: 3.48 — Graduated: May 2019

PROJECTS

Subspace Clustering
- Derived theoretical proof to show subspace clustering is better than K-means clustering for high-dimensional data (4D and above)
- Provided theoretical guarantees to make spectral-based subspace clustering more robust in the presence of noise and error
- It has various applications such as image processing, face clustering, motion segmentation, etc

Parallel File System (PFS)
- Implemented PFS to allow multiple clients to do file operations (open, read, write, seek, close) on files that are stripped across multiple file servers with no shared physical memory and disk storage
- Designed a client-side cache using invalidation based protocol to further improve PFS performance
- Constructed a Distributed Metadata Manager to store and maintain all metadata information associated with a file
- **Technologies:** C++, Linux, Synchronization, Caching, Google Remote Procedure Call (gRPC)

BuddyMap
- Developed an application that allows user to locate nearby friends close to their location and to get information about nearby social events or group meetings
- Managed back-end team responsible for creating and updating database with user data and developing secure and fast servers
- Expanded user-interface with functionalities such as messaging, creating groups and events, poking a friend, and optional real-time locations of users
- **Technologies:** Django, React Native

Peer-to-Peer File Sharing System
- Designed and implemented a file sharing system to distribute large files using peer-to-peer (P2P) network model
- Utilized multithreading and piece selection heuristics to minimize distribution time of a file to all interested peers
- Developed fault-tolerant system in which crashed peers can rejoin the network upon recovery, and resume download/upload
- **Technologies:** C, Linux, Socket Programming (using TCP), Multithreading & Multiprocessing

SKILLS

- **AI Tools:** Cursor, Copilot, MCP
- **Languages:** Python, Swift, C, C++, C#, Java, Javascript
- **Frameworks:** FastAPI, NextJS, Tensorflow, Django, ReactJS, NodeJS, Flask
- **Data Science:** Machine Learning (Keras, NumPy, Pandas, Matplotlib, Scikit-Learn), Deep Learning (RNN, LSTM, ConvNets), Natural Language Processing (Word Embeddings, Word2Vec)
- **DevOps:** Amazon Web Services (AWS), Google Cloud (GCP), Docker, Hadoop
- **Version Control:** Git, GitHub, Bitbucket
- **Databases:** SQLite, MySQL, PostgreSQL, MongoDB, DynamoDB
- **Operating System:** MacOS, Linux, Windows
- **Mobile Application:** iOS

COURSEWORK

Advance Machine Learning, Machine Learning, Deep Learning, Natural Language Processing, Artificial Intelligence, Algorithm Design and Analysis, Distributed Systems, Cloud Computing, Operating Systems

REFERENCES

- Deshraj Yadav, Mem0 (email: deshrajdry@gmail.com)
- Qicheng Ma, Youpi Inc. (email: qma@youpi.dev)
- Dr. Daniel Kifer, Penn State (email: dkifer@cse.psu.edu)
- Sakthi Kumar Arul Prakash, Carnegie Mellon University (email: sakthikap77@gmail.com)
- Dr. Patrick McDaniel, Penn State (email: pdm12@psu.edu)