Mark McGuire

sentennial.org

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EDUCATION

California Polytechnic State University — San Lius Obispo, CA
Bachelor of Science in Computer Science, Minor in Mathematics; GPA: 3.517 — *Sep. 2023 – Jun. 2027*

Stanford Continuing Studies — Stanford, CA
Coursework focused on neural networks and their applicability in gen-AI and LLMs — *Jan. 2024 – Mar. 2024*

EXPERIENCE

Expedera — Santa Clara, CA
AI/ML Software Engineer — *Jun. 2024 - Sep. 2024*
- **Model Optimization**: Wrote and perfected DFS and DP algorithms to optimize bottlenecks. Achieved an average decrease of 27% in peak memory usage through node-splitting and layer execution order optimizations.
- **Estimation Tools**: Created internal bash and python scripts that streamlined model estimation, saving ~36 dev hours per quarter by increasing productivity and flexibility within workflow.
- **CV Model Conversion**: Worked on updating and converting legacy implementations of various multimodal computer vision models such as BEVFormer, MMDet3D, and MMCV.
- **ML Frameworks**: Gained industry experience working with common ML libraries like TensorFlow and PyTorch, and exchange mediums like ONNX.
- **Collaboration**: Actively participated in code reviews and team meetings, contributing to the continuous improvement of internal tools and processes.

Ramen Nagi — Palo Alto, CA
Shift-lead/Head Chef — *Aug. 2021 - Jun. 2023*
- **Shift-Lead**: Started as a server, eventually took on managerial duties like QA and floor. Mentored and trained fellow servers. Led flow of service, instructing servers on orders, running, bussing, etc.
- **Head-Chef**: Curiosity about cooking/prep process led to technical training. Worked up to head chef/kitchen leader. As leader, ran kitchen and helped conceive and institute practices increasing productivity and efficiency.
- **Administration & Oversight**: Led closing and opening of restaurant, collecting data at the end of shifts.

PROJECTS

- **Sentennial**
  - **Next.js web app**: Developed and deployed a fully built NextJS blog/personal site using Next's underlying React functionalities, TypeScript, and Node.
  - **Frontend**: Gained experience with state management, dynamic routing, and responsive design. Used modern TS techniques and leveraged React for dynamic, component-based UI
  - **API & Rendering**: Built API routes to fetch and style Markdown content, added category filtering, and optimized performance with SSG/SSR for better SEO.

- **Hackathon: Bill Scanner**
  - **Django web app**: Developed and deployed a Django project that utilized Python's open-cv and Google's Tesseract to analyze invoices and paper bills, creating calendar notifications and digital summaries.
  - **ML & CV**: Applied preprocessing techniques like resizing, thresholding, and denoising to enhance image quality for text extraction, integrating with advanced CV libraries and OCR engines for effective file parsing.
  - **Authentication & APIs**: Utilized various Google APIs including Google OAuth to allow users to securely sign in and create calendar events. Created Django middleware to handle permissions and access.

- **Movie Recommendation System**
  - **Machine Learning**: Prototyped with Jupyter Notebooks, and mastered ML tools like Pandas, NumPy, and scikit-learn, applying them to public movie dataset modeling.
  - **AWS**: Integrated cloud functionality through the utilization of AWS. Learned about boto3 and s3 buckets.
  - **Project Structure**: Took prototyped code and instituted development best practices to create a working project. Separated code into multiple files and modules, making project accessible and readable.

PROGRAMMING SKILLS

- **Languages**: Python, C/C++, Typescript, Java   **Technologies**: PyTorch, Tensorflow, Django, Next, React