Kevin Karnani

Machine Learning Researcher Aspirant

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Education

Drexel University — *Philadelphia, PA*

Bachelor of Science in Computer Science — *Graduation: June 2022*

Concentrations in AI and Computer Vision — *Cumulative GPA: 3.94*

Minor in Mathematics

Experience

Drexel University — *Philadelphia, PA*

Computer Vision Research Assistant — *Jun 2021 — Current*

- Generalizing the process of extracting metadata from 5 biological specimen image repositories storing 500,000+ images
- Refining the specimen bounding boxes generated by detectron2 using HSV conversion to increase confidence by 20%
- Integrating Optical Character Recognition (OCR) to read specimen tags and help generate and refine ground truth data
- Experimenting with various Optical Marking Recognition (OMR) techniques to generalize ruler reading for measurements

Clarivate Analytics — *Philadelphia, PA*

Junior Software Engineer — *Sep 2020 — Mar 2021*

- Ported the next generation of a data citation index (Web of Science) that generates $249 million in revenue
- Migrated 4 core components of the Web of Science legacy app to the new application in an Agile environment
- Updated and created 6 features of the new Web of Science using Angular11, RxJS/RxJava, and Java microservices
- Adhered to standard CI/CD practices by writing 500+ unit/e2e test and 100+ PR reviews to obtain 93% Sonar coverage

Comcast — *Philadelphia, PA*

Software Developer — *Sep 2019 — Mar 2020*

- Developed an administrative portal that tracks fiber optics usage, yielding a 60% maintenance efficiency enhancement
- Designed 8 Angular8 webpages with a NodeJS backend making RESTful calls to MongoDB in an Agile environment
- Automated multi-company GitHub synchronization using Python, AWS, and Docker, yielding a 30% productivity increase
- Ascertained 98% code interpretability and quality by writing SwaggerDocs documentation and 200 MochaJS unit tests

Projects

Digital Pathology — *Drexel University*

Lead Developer & Project Manager — *Sep 2021 — Current*

- Remodeling an old project using digitized slides to improve the classification accuracy of eosinophil cell density to 80%
- Determining the appropriate treatment for potential chronic sinusitis given high eosinophil cell counts using a CNN
- Transitioning from single-CPU to multi-GPU usage to reduce computational complexity of image segmentation by 95%
- Containerizing the project onto AWS SageMaker and S3 to automate hyperparameter tuning and increase runtime speed

Stroke EDA Predictor — *Drexel University*

Developer & Creator — *May 2021 — Jun 2021*

- Facilitated a collaborative project on data with 5000 patients and 10 features to classify stroke patients with 80%+ accuracy
- Assessed the difference in yielded metrics of models from scratch such as Logistic Regression, SVMs, and Random Forest
- Employed data imputation and oversampling techniques to rectify missing data as well as any data imbalance biases
- Performed Exploratory Data Analysis and Feature Selection to find Age has a 35% contribution factor towards strokes

Skills

Programming Python, Java, MATLAB/Octave, C, C#, Bash, Angular8+, HTML5, CSS, JavaScript, NodeJS, LaTeX

Technologies Git, Jira, TensorFlow, PyTorch, Detectron2, NumPy, Pandas, Sci-Kit Learn, AWS EC2, MongoDB

Languages Spanish, Hindi