

Pradeep Senthil

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EDUCATION

- **University of Illinois - Urbana Champaign** Expected May 2023
Masters of Science - Computer Science
Advisors: Dr. Matthew C. Caesar, Dr. Ryan N. Dilger
Courses: Deep Learning for Healthcare, Topics in Software Engineering, Topics in Internet of Things
- **University of Illinois - Urbana Champaign** Aug 2017 - May 2021
Bachelors of Science - Computer Science
Courses: Data Structures, UI/UX Design, Algorithms, Applied Machine Learning, Computer Security

EXPERIENCE

AIFARMS

- *Graduate Research Assistant* *September 2021 - May 2023*
 - **Realtime pig tracking:** Designed and developed a deep learning analysis framework to process over 30 terabytes of swine research video into actionable metrics. Additionally, developed a system for graduate students to access metrics data and perform analysis.
 - **MRI Mask Segmentation:** Designed Convolutional Neural Network (CNN) algorithm to automatically segment brain gray matter from pig MRI images. Project was orally presented at the SBR 2022 research conference.
 - **AVAT:** Designed and developed an open-source video annotation tool for behavioral and computer vision applications.

Walrus Security

- *Software Engineering Intern* *January 2022 - Aug 2022*
 - **Deepfake Dataset:** Developed automated solution to create a large synthetic deepfake dataset consisting of over 30,000 deepfake videos for use in internal analysis and training.
 - **Chrome Extension:** Researched and developed POC deep learning models that achieve a deepfake detection rate of 70% on the Facebook DFDC dataset.
 - **Doublecheck:** Created and modified Django models and management scripts to help gather data and improve the facial recognition system by reducing the false positivity rate over 80%

British Petroleum (BP)

- *Machine Learning, AI Intern* *May 2021 - August 2021*
 - **Document Confidentiality:** Worked with Head of Microsoft Platforms at BP to design POC for automated document classification that complies with security guidelines. Done using Microsoft AIP, Security Compliance tools and NLP.
 - **AI Gauge Reading:** Developed a deep learning model to classify oil gauge readings based off an image.
 - **GAN Data set generation:** Created a Generative adversarial network (GAN) to generate more training data to be used in training and validation of created edge detection models.

British Petroleum (BP)

- *Data Science, Data Visualization Intern* *September 2020 - April 2021*
 - **Yammer Sentiment:** Ran NLP models on Azure to determine positivity of a Yammer post and correlate with location, time of post, etc. Presented POC to the Digital Advisor of the CEO and Board of BP.
 - **Yammer Visualization:** Used PowerBI to create visualizations based on data collected from Yammer such as post time, location, etc through Flow into a POC dashboard.

Dilger Lab

- *Research Assistant* *September 2020 - Aug 2021*
 - **Motif Dashboard:** Worked with Dr. Ryan Dilger to design an interactive dashboard to control 60 remote cameras and IoT devices deployed at the Piglet Nutrition and Cognition Lab (PNCL). Leveraged using React.js and Flask.
 - **Imgstore data pipeline:** Designed and deployed data pipeline to process terrabytes of reserach video by leveraging Docker, Box API and Deep Learning algorithms.

PROJECTS

- **AVAT:**
 - Open-source online Annotation tool to record animal behavior and CV annotations for AI research using React.js and JS
 - Ran extensive user testing to find pain points in current annotation methods and designed new UI to accommodate issues
 - Integrated neural networks to provide automatic annotations to boost annotation speed by over 70%
- **UIUC Transit:**
 - Designed and built iOS App to display the closest bus stops in the Champaign-Urbana area
 - App written in Swift and uses CUMTD REST API for accessing bus information in real time
 - Currently deployed in the Apple App Store with a 5 star rating.

SKILLS SUMMARY

- **Languages:** Python, JavaScript, Swift, C++, Bash
- **Frameworks:** React.js, Django, Docker, Docker-compose, PyTorch, Tensorflow, Flask, NodeJs
- **Platforms:** Linux, GCE, iOS, Raspberry, Azure services