



Field Session Proposal - Fall 2023

Machine Learning For Time-Series Pose Classification

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About Venvee

Venvee is a Mines-affiliated start-up using spatial AI to collect and understand human behavior in physical spaces. Our current solution provides an end-to-end understanding of in-store customer journeys for the retail industry, using spatial deep learning, computer vision and digital twin construction to produce precise customer pathing and action insight using only a retailer's existing infrastructural/loss prevention cameras.

About the Project - Time-Series Human Pose Classification

Understanding human behavior comes with both the collection and the analysis of human poses and movement. To analyze human behavior takes pose classification, such as labeling when someone is walking, standing, sitting, etc. Though this can be done manually, AI allows us to train ML models so we don't have to!

Your team's mission is to create a time-series based pose classifier, using pre-existing datasets, synthetic datasets, and data generated by your team. You will connect this classifier to Venvee's data pipeline for integration and testing with our system. Venvee has a warehouse with 16 cameras where you can capture data for building and testing your solution. We'll provide a definition of done as well as guidance with our ML and CV experts to help you along the way, however, how you create your solution is up to your team.

Desired Skillsets

Curiosity, creativity, problem solving, and the ability to learn fast and from feedback. Other than that, experience in ML is very helpful, as well as minor CV and deeplearning knowledge.

Skills You'll Learn

The full process of capturing data, using existing data, training, testing, and optimizing Machine Learning models. You will also learn about Time-Series Analysis.

Preferred Team Size

4-5 students

Where You'll Work

Like all devs at Venvee, students may work wherever they work best! There is an option to work out of the co-working space (the Mines Interim Venture Center) where our primary office is located (1600 Jackson Street, Suite 150), but it is not a requirement. We will plan to meet in this space for check-in meetings, though there is always the option to join via Google Meet.

Post-Field Session

There is a high potential we will offer part-time positions on a fast paced, rapidly growing, fully hybrid, fun, and autonomous team doing cutting edge development in AI and CV (we've hired 4 past field session members).

Team Agreement

Upon joining the team, students will be asked to sign an agreement pertaining to non-disclosure and intellectual property. Though we do not anticipate a strict NDA being required for the work students will perform with this project, we will ask that they sign a limited one so we may more openly share our resources and information with them. This will not restrict students from sharing parts of the project they've worked on for future career opportunities.

This agreement will also ask students to acknowledge that all IP created during this project will be solely owned by Venvee, Inc.. Venvee is happy for students to share the work they performed on the project, as well as provide reference letters for project work, especially if doing so advances their desired career path.

Proposal Point of Contact

Please send any questions to Torin Johnson - torin@venvee.com