

Job Descriptions for AVS Project

Co-op and/or paid-research opportunities within the Department of Mechanical Engineering and Mechanics will be available for the coming co-op cycles of Spring-Summer 2023 and Fall 2023-Winter 2024.

The positions will be sponsored by an applied research project related to an Autonomous Vehicle Shuttle (AVS).

The project's scope of work involves two tasks:

1. Analysis of survey data collected from riders of the AVS and from citizens of the City of Philadelphia
2. Analysis of data collected from the operation of the AVS

Two positions per cycle will be sponsored, one per task.

Eligible students are encouraged to apply.

Detailed description and qualifications per position are provided below.

Description for Position 1:

This co-op or paid-research position will be responsible for analyzing data collected from the operation of a physical autonomous vehicle shuttle (AVS). The data will be provided in the form of video frames and multivariate time series. The scope of work involves analysis of the data using state-of-the-art python-based machine learning and computer vision algorithms, such as TensorFlow, PyTorch, OpenCV, scikit-learn, and more. The goal of this task is to observe the interactions of the AVS with its surrounding environment during its operation, and its performance under various traffic conditions.

Number of Openings for Position 1:

For the co-op cycle Spring 2023-Summer 2023: one (1) position

For the co-op cycle Fall 2023-Winter 2024: one (1) position

Qualifications for Position 1:

Required qualifications:

Excellent programming skills in Python or other programming language.

Highly preferred qualifications:

Experience with machine learning packages such as TensorFlow, PyTorch, and computer vision packages, such as OpenCV.

Other qualifications:

Passion to learn data analytics and machine learning modeling (this is a must!).

Thrilled to apply machine learning in the growing field of autonomous vehicles (this is also a must!).

Technical aptitude, including an above-average problem-solving capability.

Understanding of basic statistics and probability theory.
Attention to detail.

Location:

The completion of the work can be performed either on campus or remotely.

Preferred Majors:

Mechanical Engineering, Electrical Engineering, Computer Science

Description for Position 2:

This co-op or paid-research position will be responsible for analyzing survey data collected from the riders of the AVS and from citizens of the City of Philadelphia. The scope of work involves analysis of the data using data analytics techniques. The goal of this task is to analyze the community's expectations and reactions after interacting with the AVS.

Number of Openings for Position 2:

For the co-op cycle Spring 2023-Summer 2023: one (1) position

For the co-op cycle Fall 2023-Winter 2024: one (1) position

Qualifications for Position 2:

Required qualifications:

Excellent programming skills in any programming language.

Highly preferred qualifications:

Good knowledge and use of any of the following: Excel, Python, R, Matlab or other statistical analysis software, such as STATA and SPSS.

Other qualifications:

Passion to learn data analytics and machine learning and statistical modeling.

Thrilled to apply data analytics in the field of autonomous vehicles.

Technical aptitude, including an above-average problem-solving capability.

Excellent verbal communication skills.

Understanding of basic statistics and probability theory.

Attention to detail.

Location:

The completion of the work can be performed either on campus or remotely.

Preferred Majors:

Mechanical Engineering, Electrical Engineering, Computer Science