Oltan Sevinc

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Profile

Recent Mechatronic Engineering (Honours) and Computer Science (AI) dual degree graduate. Strong background in robotics, computer vision, neural networks, and programming. Recipient of several merit scholarships.

Experience

Software Engineer– Honeywell **December 2021 – September 2022**

- Enhanced the backend of Honeywell's flagship product Experion using modern C++ with Boost.
- Automated the nightly build archiving process utilizing advanced Python.
- Applied AGILE software development principles, implemented over tools such as JIRA, Confluence, and git.

Thesis Student – University of New South Wales **2022 September – 2023 August**

- Created an interface real-time haptic teleoperation software interface between a Universal Robots UR5e robot and a 3DSystems Touch Haptic feedback device.
- Presented findings in the form of a report, with future work in the form of a paper possible.
- Invited to pursue a PhD with a stipend by the University.

Autonomous Vehicles Team Member – UNSW Redback Racing **2023 March – Present**

- Working as a part of UNSW's Student Formula team's autonomous vehicles department.
- Implementing EKF Based SLAM coded in C++ using LIDAR data and IMU sensor readings communicated over ROS2.

Academic – University of New South Wales **February 2022 – Present**

- Teaching and reviewing assessments for courses:
  - MTRN4230 Robotics, where a UR5e robot is used to teach students coordinate transformations, the DH convention, the Jacobian, and path planning.
  - MTRN4010 Autonomous Systems, where sensor data fusion using an Extended Kalman Filter is taught. The course is implemented as a project over MATLAB.
  - COMP9331 Computer Networks, where the network protocol stack is examined piece by piece, with a practical component requiring socket programming over Python.

Education

Bachelor of Mechatronic Engineering (Honours) **July 2018 – Present**
Bachelor of Computer Science (AI)

First Class Honours

University of New South Wales, Sydney

Select Projects

More information about my projects can be found at https://oltans.github.io/.

Computer Vision Cell Tracking **2022**

- Compared the effectiveness various motion tracking methods for cells using the OpenCV framework over Python.
- Implemented and tested novel algorithms to quantify the performance of tracking methods, with a result of 82% correct tracking.

Neural Network Categorizing Cats by Coat **2021**

- Compared different neural network architectures such as linear, convolutional and ResNet for their effectiveness in an image classification task.
- Read in and processed data using the pandas and NumPy libraries.
- Implemented a ResNet architecture from the ground up over PyTorch. Configured the layers, chose the optimizer and meta variables for best results.
- Researched and utilised data augmentation to reduce overfitting in the data.
- Reached 79% correct test set classification over 10 categories with a limited learning set.

Skills

Software/IT: C++, Python, MATLAB, Object Oriented Programming, AGILE, Multithreaded Programming, Network Protocols, Computer Vision (OpenCV), Neural Networks/Deep Learning (PyTorch), NumPy, pandas

Robotics/Engineering: Robot Operating System (ROS), LIDAR processing, Kalman Filters, Coordinate Transformations, CAD (SOLIDWORKS)