

## Davit Soselia

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 [github.com/dsoselia](https://github.com/dsoselia)

 [DavitSoselia\\_](https://twitter.com/DavitSoselia_)

## SKILLS

*Programming&Scripting Languages:* (Proficient) Python, swift; (Familiar) c#, C, C++, SQL, Go, JavaScript

*Frameworks:* Pytorch, TensorFlow, Keras, scikit-learn, openCV, Spark, CoreML, FastAPI.

*Platforms&Tools:* Git, Slurm, AWS, Docker, Kubernetes, Jenkins, CircleCI, Azure, Piper.

## EDUCATION

**2022- 2024**

**University of Maryland, College Park, Maryland**

*Master of Science, Computer Science*

**2019 - 2022**

**KTH Royal Institute of Technology, Stockholm, Sweden**

*Master in Machine Learning*

*Thesis: Continual Learning and Biomedical Image Data*

**2015 - 2019**

**San Diego State University, San Diego, California**

*Bachelor of Science summa cum laude*

*Computer Engineering, GPA:4.0/4.0*

## WORK EXPERIENCE

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***Sept 2022 – Current***

**Graduate Teaching Assistant**

*University of Maryland, College Park, Maryland*

Conduct lab sessions for 50 students in CMSC216 Introduction to Computer Systems.

***May 2022 – Aug 2022***

**Consultant**

*CodeMill, Google assignment, Stockholm, Sweden*

- Prepared machine learning models for production.
- Evaluated non-intrusive deep-learning-based speech quality metrics for Google Meet.
- Led crowdsourcing efforts that expanded labeled dataset multiple times and lead to improved performance.

***June 2020 – May 2022***

**Co-founder, Machine Learning Engineer**

*ARKUS AI, Stockholm, Sweden*

Built a chromosome segmentation pipeline from metaphase images using OpenCV for rough and UNET for fine segmentation that took 20 minutes from karyotyping process.

Improved hand-drawn pedigree extraction system's accuracy using YOLO v4.

Built MLops pipeline in AWS.

***April 2020 – June 2022***

**Research Engineer**

*KTH, Stockholm, Sweden*

Movability Lab - Researched machine learning solutions to various problems. Build library for Lower-limb Joint Torque Prediction from EMG time-series data in TensorFlow.

Researched supervised learning problem of correlating best sole structure based on foot pressure data.

Develop ARKit iOS application to track joint angles and compare to baseline.

RPL – Worked on finding optimal sensor locations through DGNs under Dr. Azizpour.

Trained masked autoencoder networks, using Gumbel-Softmax instead of random sampling to learn the distribution of preferred samples.

Sped up inference of a robot arm object orientation detection by using TensorRT and optimizing OpenCV pipeline.

**May 2018 – April 2020**

**Software Engineer, Machine Learning**

*AIRO, Tbilisi, Georgia*

Develop Computer Vision solutions for various companies, the largest project with TBC Insurance. Lead a group to develop classifiers for automating parts of the visual evaluation of the car insurance process, including car angle and scratch damage detection.

**Summer 2018**

**Summer Research**

*San Diego State University, San Diego, California*

Implemented RNN, GBT, RF, BNN fall detection classification in TensorFlow and scikit-learn and trained using IMU sensor data. Conducted feature importance analysis for identifying the optimal sensor locations on the body achieving over 95% accuracy with high. See the paper (Paolini, 2019) for details.

**Summer 2016**

**Software Engineer Intern**

*Productsavvy consulting, Tbilisi, Georgia*

Automated UI testing for Wolfpack mobile application using Calabash for Android and XCode automation for iOS, reducing UI testing time from 90 to 15 minutes.

## **RESEARCH**

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### **Journals, Conferences, and Workshops**

L. Zhang, **D.Soselia**, R. Wang (Mar, 2022), Lower-limb Joint Torque Prediction using LSTM Neural Networks and Transfer Learning, IEEE Transactions on Neural Systems and Rehabilitation Engineering.

C. Paolini, **D.Soselia**, H. Baweja, M.Sarkar (Dec, 2019), Optimal Location for Fall Detection Edge Inferencing, IEEE Globecom2019

**D. Soselia**, L. Shugliashvili, I. Koberidze, S.Amashukeli, S. Jijavadze, G. Chelidze (December, 2018), Freezing Networks: Weight Preservation Procedure for Continual Learning, *NeurIPS 18 Workshop on Continual Learning*.

**D. Soselia**, M. Tsintsadze, L. Shugliashvili, I. Koberidze, S.Amashukeli, S. Jijavadze (November, 2018), On Georgian Handwritten Character Recognition, *IFAC-PapersOnLine 51.30 (2018): 161-165*.

## **AWARDS**

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### **Scholarships and project funding**

2022 – Sting accelerator funding

2021 – Shota Rustaveli National Science Foundation of Georgia funding for Georgian Language Processing API

2020 – KTH Innovation funding for FinSentim project

2019 – Swedish Institute Scholarship for studies at KTH

2018 – SDSU Summer Research Scholarship

2018 – Prototyping and travel grants to present AIPen project at Golden-Bytes from SDSU

2015 – Millennium Challenge Corporation SDSU tuition Scholarship

2015 – Magticom Scholarship for the highest NAEC aptitude test scorer in Georgia