Dennis Melamed

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EDUCATION

Carnegie Mellon University, Robotics Institute

- Master of Science in Robotics, Prof. Kris Kitani (August 2019 – July 2021)
- Selected Coursework: Computer Vision; Kinematics, Dynamics & Control; Localization & Mapping; Reinforcement Learning

University of Minnesota, Dept. of Electrical and Computer Engineering

- B.S. Computer Engineering, Summa Cum Laude with Distinction (Sept. 2015 – May 2019)
- Thesis: *Indoor Micro-UAV Navigation with Minimal Sensing* (Profs. Volkan Isler & Derya Aksaray)
- IEEE-Eta Kappa Nu – Omicron Student Chapter – Vice President 2018-2019

SKILLS

Programming Languages:	Python, C++, Embedded C, MATLAB, Java, Ruby
Robotics Tools:	Robotic Operating System, Gazebo, V-REP, OpenCV, Keras, PyTorch
Other Tools:	Unix ecosystem, Windows kernel development, CUDA/openACC, AWS
Languages:	English (native), Russian (native), Spanish (proficient)

WORK EXPERIENCE

Nextdroid Robotics, Software Engineering Intern — *June - Aug 2018*

- Achieved sensorless high-precision motor speed control for subsea robotic platform
- Co-developed high-accuracy image processing on military hardware for aerial scene understanding
- Designed data storage architecture using Ruby/AWS for secure client data processing

National Instruments, Software Engineering Intern — *June - Aug 2017*

- Implemented network interfaces for measurement device drivers to maintain stability on newer platforms
- Developed encryption systems to allow first-in-company secure device firmware/driver communication

Robotic Sensor Network Laboratory, Research Assistant — *2015-2019*

- Developed GPS-denied micro-UAV platform for agriculture using ROS, C, and V-REP simulation
- Designed and trialed computer vision system for micro-UAV control using low-resolution imaging

Department of Civil Engineering, Computer Science Research Assistant — *2015-2016*

- Parallelized state-of-art wave propagation algorithms to speed concrete simulations by 10x
- Designed MN Dept. of Transport user interfaces to ease ground-penetrating radar data analysis

MORE PROJECTS

Campchat, Personal Project — *May - Aug 2020*

- Developed embedded C firmware & Android app to enable LoRa text messaging with no cell signal

Micro-UAV Agricultural Monitoring Platform, U of MN — *2017-2019*

- Designed lightweight (<50g) fully autonomous system for data collection in restricted environments

Gesture Based Micro-UAV Control, U of MN — *Sept - Dec 2017*

- Architected & developed high precision gesture tracking system to control micro-UAV flight

PUBLICATIONS

Inertial Deep Orientation-estimation and Localization, CMU — *2019-2020*

- State-of-the-art deep-learning method for IMU-only pedestrian localization (to appear in AAAI 2021)