# MOHAMED A. ABDELHADY

Amsterdam, NL

+49 151 4682 3325 ◇ m.adel.abdelhady@gmail.com

Github  ◇ Linked in

## EDUCATION

**University of Twente**  *Sep. 2015 - Aug. 2017*
MSc in Robotics & Mechatronics  Cum Laude. CGPA: 8.5 / 10
Thesis: "Modular SLAM Framework using Component-based Approach" 

**German University in Cairo**  *Sep. 2009 - July 2014*
BSc in Mechatronics  Cum Laude. CGPA: 1.4 / 1.0

**fortiss - Technical University of Munich**  *Feb. 2013 - Aug. 2013*
BSc thesis: "Probabilistic Sensor Data Fusion for a Quadrotor"  GPA: 1.1 / 1.0

## SKILLS

| | |
|---|---|
| **Languages** | Python, C++, MATLAB, Bash |
| **Tools & Frameworks** | ROS, Git, OpenCV, Keras, TensorFlow, MRPT, gRPC, Numpy, Jenkins |

## EXPERIENCE

**Fourthline** ⬀  Aug. 2019 - present
*Computer Vision & Machine Learning Engineer*

· Build and improve deep learning models for identity document authentication.
· Introduce novel architectures and pipelines that enhanced security features detection by 23%.
· Research the integration of Bayesian inference into deep learning models.

**ASML** ⬀  June 2018 - July 2019
*Software Design Engineer*

· Develop model-driven software components and algorithms for new machine modules.
· Implemented data visualization pipelines to verify new motion algorithms.
· Developed a crawling tool to inspect illegal interfaces within team boundaries that reduced the development time.

**Magazino GmbH** ⬀  Sep. 2017 - May 2018
*Robotics Software Developer*

· Led the technical onboarding and worked in a team of six to deploy autonomous robots fleet at 2 intra-logistics warehouses in Munich and Berlin.
· Contribute to topological graph and multi-robot navigation, and planning.
· Created a robot-in-the-loop testing pipeline to improve the integration and validation process.

**German University in Cairo**  Aug. 2014 - Aug. 2015
*Research & Teaching Assistant*

· Developed multi-robot planning and task allocation algorithms for heterogeneous *Khepera-III* mobile robots.
· Developed computer vision tracking software for medical micro-particles.
· Teaching and management of 6 undergraduate courses.

## PROJECTS

Pedestrian detection and tracking using FCNs (ongoing) ⬀

Kaggle terrain classification using IMU - Top 6% ⬀

Python packages for robotics algorithms and autonomous navigation (contributor) ⬀

Visual navigation for a mobile robot using monocular vision ⬀

Bond graph modeling of a gimbaled-thrust rocket ⬀

Localization framework for a rail-guided robot ⬀

## PUBLICATIONS

**Learning A Recurrent Neural Network for State Estimation using Filter Data** ⬀        *2019*
*Intelligent Vehicles Symposium (IV)*
Authors: *Ahmed M. Hammam,* **Mohamed A. Abdelhady***, Omar Shehata*

**Demo Design: The VIRO Agile Eye** ⬀        *2018*
*DSPE Mikroniek magazine, Volume 58, Issue 1*
Authors: *Louis Stijn,* **Mohamed A. Abdelhady***, Samer Abdelmoeti*

**Multi-robot Task Allocation for Search and Rescue Missions** ⬀        *2014*
*European Workshop on Advanced Control and Diagnosis*
Authors: *A. Hussein,* **Mohamed A. Abdelhady***, M. Bakr, Omar Shehata, Alaa Khamis*

## TRAININGS & WORKSHOPS

**Optimization Perspectives on Learning to Control**
*Conference on Robot Learning CoRL'18* ⬀

**Sensori-motor intelligence via model-based optimization**
*Conference on Robot Learning CoRL'18* ⬀

**TensorFlow workshop**
*GoDataFest'18*

**Software API Design**
*ASML'18*

**Energy-based modeling, simulation and control of complex physical systems**
*TU-Berlin SAMM'16 summer school* ⬀

**Aerial Mobile Manipulation**
*Robotics Science & Systems RSS'13* ⬀

## EXTRA-CURRICULAR

Team strategy developer at ASML's robocup team using behavior trees.

Judge at the minesweeper robotics competition for humanitarian de-mining.

Makerspace developer at the University of Twente.

Part-time junior teaching assistant for CAD labs.

ACM workshops participant

AIESEC Munich talent developer.