

ARIF Mahmoud Adham Abdelhameed

PHD Candidate



General

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- 📍 Flat B, 1/F, LOK KA House, No. 1A Baker Street, Hung Hom, Kowloon, Hong Kong
- 🏛 The Department of land surveying and Geo-Informatics – The Hong Kong Polytechnic University

Research Interests

- Localization and sensor fusion for autonomous driving
- SLAM in challenging urban environments.
- Point cloud reconstruction using close range photogrammetry.
- Structure from motion technique and digital image processing construction application.

Education

- PhD Researcher 2021- up to now
 - Land Surveying and Geo-Informatics – Faculty of Construction and Environment – The Hong Kong Polytechnic University
 - Research topic :
'Toward A Robust and Accurate Autonomous Vehicle Localization System-based Multi-sensors Integration in Challenging Environments'
- MSc. Degree 2021
 - Geomatics Engineering, Civil Engineering Department, Faculty of Engineering, Cairo University
 - Research topic :
'Evaluation of using video camera and photogrammetric computer vision techniques for 3D reconstruction and track detection of the railway network in Egypt.'
 - MSc. Courses 3/2017 –3/2018
Distinction with Honor Degree: GPA: A+ (4.0/4.0) - Rank: 1st among 7 students.
- BSc. Degree 2016
 - Civil Engineering Department, Faculty of Engineering, Cairo University
 - Distinction with Honor, (89.7%) - Rank: 12th among 450 students.
 - Graduation Project Reinforced Concrete 3/2016 -7/2016
Distinction with Honor

Publications

- Adham, M., Mohamed, M.G., El Shazly, Adel., 2020. Railway Tracks Detection of Railways Based on Computer Vision Technique and Gns Data. In: ICCSTE'20, pp. 1–8. doi.org/10.11159/iccste20.269.
- Adham Mahmoud, Mohamed Gomaa, Adel El Shazly, ' Low-cost framework for 3D reconstruction and track detection of the railway network using video data', The Egyptian Journal of Remote Sensing and Space Science,2022, <https://doi.org/10.1016/j.ejrs.2022.11.001>.
- Adham Mahmoud, Wu CHEN, Yaxin LI, Tianxia LIU, 'Towards Robust Global VINS: Innovative Semantic-Aware and Multi-Level Geometric Constraints Approach for Dynamic Feature Filtering in Urban Environments' IEEE Transactions on Intelligent Vehicles, Under review.

Awards

- Faculty of Engineering Graduation Prize for distinguished students (graduating with a general appreciation of Distinction with Honor Degree), Cairo University 2016
- Cairo University Annual fellowships for distinguished undergraduate academic years 2015/2016
- Cairo University Annual fellowships for distinguished undergraduate academic years 2014/2015
- Cairo University Annual fellowships for distinguished undergraduate academic years 2013/2014
- Cairo University Annual fellowships for distinguished undergraduate academic years 2012/2013
- Cairo University Annual fellowships for distinguished undergraduate academic years 2011/2012

Employment Experience

- Graduate Research and Teaching Assistant Civil Engineering Department, Faculty of Engineering, Cairo University (from 3/2017 – 7/2021)

Primary responsibility:

- Job duties included assistance in teaching the following undergraduate courses;
 - Surveying1
 - Surveying 2
 - Satellite geodesy, GPS, and map projection
 - Photogrammetry
 - Surveying Engineering BSc. Project
 - Surveying for Engineers (BSc. Credit Hour Program)
 - Geographic Information Systems (BSc. Credit Hour Program)
- Coursework Includes:
 - GIS, digital mapping, cartography, robust estimation, data adjustment, photogrammetry, analysis methods in geometrics, remote sensing, computer graphics, CAD drafting, digital image processing, pattern recognition, computer vision, computer programming, numerical analysis, operational research, Land surveying, topographic surveying, map projections and geometric geodesy, GPS surveying.
- Surveying Engineer at Surveying Research Laboratory, Faculty of Engineering, Cairo University (from 2/2017 – 7/2021)
 - The work includes, planning, data handling, GPS data analysis, mapping, Setting out, establish new control points, GIS work, and drawing revision
 - Precise monitoring and deflection measurements for bridges loading test.
Loading test for bridges Projects as:
 - Misr – El-Ismailia bridges
 - Misr - El-Alexandria bridges
 - Misr - El-Suez bridges
 - Rod El-farag bridges

Civil Engineer at CEGMAN consulting engineering group (from 9/2016 to 2/2017)

- Civil engineer in Army housing project in the new administrative capital as Structure and surveying engineer
Primary responsibility: Participated in different Surveying and construction projects.

Computer skills

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| ▪ Programming Languages | MATLAB, Python, CPP |
| ▪ Linux/Unix (e.g., Ubuntu) | Excellent |
| ▪ Reality modelling data processing Software | Context capture ,agisoft photoscan software |
| ▪ Digital Mapping Packages | AutoCAD |
| ▪ Remote Sensing Software | ArcGIS |
| ▪ Earthwork and Road design software | Civil 3D,Surfer |
| ▪ Structure Analysis programs | Sap2000,SAFE,ETABS |

Attended Courses and Workshop

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| ▪ Statistical analysis in experiments | FLDC, Cairo University, Egypt | December -2018 |
| ▪ Examination systems and student assessment | FLDC, Cairo University, Egypt | August-2018 |
| ▪ Effective teaching skills | FLDC, Cairo University, Egypt | April-2018 |

Memberships

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| ▪ Member of Cairo University Club | 2016 – present |
| ▪ Member, Egyptian Engineers Syndicate | 2016 – present |

Languages

- Arabic: Fluent (read, written and spoken).
- English: (Good listening, speaking and excellent at reading, writing)

Interest

- Sports: Table Tennis, Volleyball, and Football
- Reading
- Travelling

References

- Prof. Adel El-Shazly
Professor, Geomatics and Surveying Engineering, Department of Public Works, Cairo University
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- Dr. Mohamed Gomaa
Assistant Professor, Geomatics and Surveying Engineering, Department of Public Works, Cairo University
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- Dr. Salem Morsy
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