Ali Babaei

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SUMMARY OF QUALIFICATIONS

- +5 years of work experience at various surveying roles: land surveyor, drone operator, UAV Laser scanner field technician, RTK & static GNSS operation, operating total stations and levels, geospatial data processing, UAV image processing, drafting
- One year co-op at a Startup at the Science and Technology park of University of Tehran : Design of industry-level 3D acquisition system using off-the-shelf components
- Strong mathematical background in linear algebra, statistics, theory of errors, least square adjustment, numerical analysis, and optimization
- Dominance of Image-based modeling algorithms, pattern recognition, multi-view geometry, optical metrology, dense matching, point-cloud processing, and soft computing
- Passionate about learning new technologies

SKILLS

- Highly Proficient in AutoCAD Land Development
- Proficient in Photogrammetry software: Pix4DCapture, Pix4D Mapper, Agisoft PhotoScan
- Experience working with commercial laser scanner (Riegel/Leica) and structured light scanners
- Strong programming Skills: Matlab, Python, C, and C++ (OpenCV, PCL, OpenGL)
- acquaintance with commercial Image Processing software

EDUCATION

- **M.Sc. in Photogrammetry** – University of Tehran (Sep 2009 - Feb 2012)
- **B.Sc. in Surveying Engineering** – K.N.Toosi University of Technology (Sep 2005 - Aug 2009)

ADDITIONAL EXPERIENCES

Position	Company	Location	Year
Photogrammetry Engineer	**Robotic Photogrammetry Lab University of Tehran**	**Tehran, Iran**	**2016-2018**

Conducting field operation for 3D acquisition of urban environment using fixed wing and multi rotor UAV, Analyzing data and processing of captured image. Producing orthophoto mosaics, Digital Models, point cloud, and vector maps in various software such as Agisoft PhotoScan, Bentley ContextCapture, Pix4DMapper.

Researcher (part-time) | **WIDM (Waterloo Institute for Disaster Management)** | **Waterloo, Canada** | **2015-2016**

Conduct literature reviews on the 3D acquisition of urban environment using mobile mapping systems and UAV, sensor fusion methods. Collect and analyze data in the processing of image/point-cloud of sensors. Communicate with the other teams (hardware, remote sensing, environmental engineers) to share ideas.

Land Surveyor | **Ouj Negar Consulting Engineers** | **Tehran, Iran** | **2015-2015**

Research on the state-of-the-art active and passive 3D sensing techniques. Conduct experiments and evaluation of the fringe projection methods. Responsible for summarizing research results to upper hand decision makers. Networking with the international professionals for the consult.

3D Modeling Specialist | **Gilan Consulting Engineers** | **Karaj, Iran** | **2010-2010**

Processing (clean, filter, mesh, simplification, hole filling, render) of the point-clouds and images of Riegl laser scanner which was captured for digitizing and documentation of cultural heritage buildings. Operate and process the structured light scanner (fringe projection system) to scan objects with the smaller size.

Lecturer | **Islamic Azad University** | **Tehran, Iran** | **2012 - 2015**

Teach the following courses: Introduction to Geomatics, Land Surveying I (Theory and Practice), Principal of Photogrammetry, Analytical Photogrammetry, and Adjustment.

AWARDS

- Graduate Students Excellence Award, 2015, Ministry of Science, Research and Technology

PROFESSIONAL DEVELOPMENT

- "Leica 3D laser scanning: from data acquisition to 3D Models", 3-day workshop, 2012, Faculty of Geomatics and Surveying Engineering, University of Tehran.
- "UAV Photogrammetry" workshop, SMPR 2013, Tehran.
- Online courses from University of Pennsylvania: "Robotics: Perception"," Robotics: Aerial Robotics", Coursera, 2016.