Laith R. Sahawneh

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Summary

- Research and development with thorough mathematical and probability background in the broad areas of autonomous systems with emphasis on **state estimation, localization**, **path planning**, collision detection and avoidance.
- Leadership role in agile development environments from technical concept development through implementation, testing and deployment using a wide range of software tools.
- Strong analytical, organizational and interpersonal skills.

Education

2011-2016	**Brigham Young University** **Ph.D. in Electrical and Computer Engineering**	**Provo, UT, USA** **GPA: 3.90/4.00**

- Dissertation: Airborne Collision Detection and Avoidance for Small UAS Sense and Avoid System

2006-2009	**American University of Sharjah** **M.Sc. in Mechatronics Engineering**	**Sharjah, UAE** **GPA: 3.92/4.00**

- Thesis: Real-Time Implementation of GPS aided Low Cost Strapdown Inertial Navigation System

1997-2002	**Yarmouk University** **B.Sc. in Electronics Engineering**	**Irbid, Jordan** **GPA: 3.43/4.00** (#1 in class)

Work Experience

04/2022 - present   TuSimple Inc. (Autonomous Trucking Technologies)   **100% Remote**
Staff Autonomy Systems Engineer

- Defining detailed functional and performance requirements and driving cross-functional collaboration and analysis to ensure the developed and implemented autonomous solutions are scalable, extensible and inline with product requirements.

08/2017 - 04/2022 Motional AD Inc.   **Pittsburgh, PA**
10/2020 - 04/2022 Senior Research Scientist

- Responsible for the full development cycle of the trajectories scoring and selection module from the design all the way to writing production level C++ code, performance metrics formulation, testing & deployment on autonomous vehicles.

09/2019 -10/2020 Research Scientist

- Design and implementation of behavior and decision making algorithms namely traffic signal and stop-sign controlled multi-way intersections, crosswalks and unprotected turns.

08/2017 -09/2019 Automated Driving Senior Engineer

- Developed, and co-implemented, tested and deployed searching-based path planning algorithm.

02/2016-08/2017 University of Florida (UF Research & Engineering Education Facility/AFRL)   **Shalimar, FL**
Post-Doctoral Associate, Department of Mechanical and Aerospace Engineering

- Research and development of **Graph-based cooperative localization** and **Extended Kalman Filter**.

2011-2016   Brigham Young University   **Provo, UT**
Graduate Research Assistant, Department of Electrical and Computer Engineering

- Research and development of **path planning**, **collision detection and avoidance** algorithms for **unmanned aircraft systems.**

2006-2011   Drake and Skull International PJSC   **Abu Dhabi, UAE**
Sr. Estimation Electrical Engineer

2004-2006   Ellipse A/S   **Abu Dhabi, UAE**
Electrical Engineer

May-Dec. 2003   Jordan University of Science and Technology   **Irbid, Jordan**
Maintenance Electrical Engineer

Software Skills

- Experience in building production level C++ software in Linux (Ubuntu) environments.
- Experienced with MATLAB and Simulink.
- Fair knowledge of Python software development.
- Wide-range use of cross-platform IDEs (e.g. CLion).
- Experienced in using LaTeX, and version control software (e.g. git).
- Fair knowledge of Model-Based System Engineering software modeling tools (e.g. Cameo and MagicDraw).

Teaching Experience

Fall 2015   **Graduate Teaching Assistant,** Feedback Control of Dynamic Systems (ECEn 483/ ME 431)   **BYU, Provo**
- Provide assistance and guidance for students in lab projects both analytical solutions and Matlab/Simulink demonstration.

Fall 2008/09   **Graduate Teaching Assistant,** Mechatronics Design Lab (MTR 590)   **American University of Sharjah, UAE**
- Supervised mechatronics projects for 10 students, office hours, assignment grading and solutions.

Fall 1998/99   **Undergraduate Teaching Assistant,** Theory of Semiconductors (EE 246)   **Yarmouk University, Jordan**
- Teach class tutorials for 30-45 students.

Internship

2001-2002   **Egyptian Telephone Company (Quicktel)**   **Cairo, Egypt**

July-Oct. 2001   **France Telecom Long Distance (FTLD)**   **Herndon, VA**

Professional Activities and Services

- Member of IEEE.
- IEEE-Eta Kappa Nu (IEEE-HKN) / IEEE Young Professionals.
- IEEE Aerospace and Electronics Society (AESS).
- Member of AIAA.
- Professional Member of Institute of Navigation (ION).
- Four conference talks, 2 proposals, and 30+ paper reviews.
- Named an *Excellent Reviewer* for the Journal of Guidance, Control, and Dynamics twice for the years 2016 and 2017.

Publications

- For the full list of my publications, please refer to my Google scholar link here.