

# Sahba Aghajani Pedram

sahbaap@ucla.edu | 808.369.4046 | Personal Website | LinkedIn | Google Scholar

## EDUCATION

### UCLA

PH.D. CANDIDATE, MECHANICAL ENG.  
MAJOR: SYSTEMS & CONTROL  
Expected June 2020 | Los Angeles, CA  
Cum. GPA: 3.95 / 4.0

### UCLA

MS IN MECHANICAL ENGINEERING  
MAJOR: SYSTEMS & CONTROL  
Grad. May 2018 | Los Angeles, CA  
Cum. GPA: 4.0 / 4.0

### UNIV. OF HAWAII AT MANOA

MS IN MECHANICAL ENGINEERING  
MAJOR: ROBOTICS  
Grad. June 2016 | Honolulu, HI  
Cum. GPA: 4.0 / 4.0

### SHARIF UNIV. OF TECH.

BS IN MECHANICAL ENGINEERING  
Grad. June 2012 | Tehran, Iran  
Major GPA: 3.8 / 4.0

## COURSEWORK

Matrix Analysis for Engineers (A+)  
Linear Systems (A)  
System Identification (A)  
Guidance, Navigation & Control (A)  
Linear Optimal Control (A+)  
Optimal Control (A+)  
Stochastic Optimal Control (A)  
Stochastic Processes(A+)  
Stochastic Estimation(A+)  
Machine Learning (A)  
Neural Networks & Deep Learning (A)  
Robotics & Lab (A)  
Computational Robotics (A+)  
Control of Mobile Robots (A)  
Software Design for Robotics (A)  
Medical Robotics (A+)

## TECHNICAL REVIEWS

Reviewer for RA-L, ICRA, IROS.

## SKILLS

### PROGRAMMING

C\C++ • Python • Matlab

### SOFTWARE & PACKAGES

• OpenCV • Keras • Pandas • scikit-learn  
• SolidWorks • SPSS •  $\LaTeX$

## PROFESSIONAL EXPERIENCE

### INTUITIVE INC. | ROBOTICS SOFTWARE ENGINEERING INTERN

June 2019 – September 2019 | Sunnyvale, CA

- Developed distributed software to control multiple robotic arms.
- Developed motion planning and hand-eye calibration algorithms.
- Developed advanced perception system with deep learning algorithms.

### INTUITIVE INC. | ROBOTICS SOFTWARE ENGINEERING INTERN

June 2018 – September 2018 | Sunnyvale, CA

- Developed augmented reality algorithms to enhance surgeons' performance.
- Developed of control algorithms to improve the performance of robotic arms.

### UCLA BIONICS LAB | GRADUATE RESEARCH ASSISTANT

September 2016 – Present | Los Angeles, CA

- Developed intelligent algorithms for robotic automation of surgical subtasks.
- Developed visual servo controllers and optimal motion planning algorithms.
- Developed stochastic sensor fusion for shape estimation of continuum robots.

### JHU COMPUTATION SENSING AND ROBOTICS LAB | VISITING GRADUATE RESEARCHER

June 2014 – August 2014 | Baltimore, MD

- Developed novel shape sensing using FBG sensors for continuum manipulators.

### HUMAN ROBOT INTERACTION LAB | GRAD. RESEARCH ASSISTANT

Jan 2013 – May 2016 | Honolulu, HI

- Developed 6 DoF haptic feedback algorithms for maglev haptic interfaces.

## SELECTED PUBLICATIONS

SCADE: SIMULTANEOUS SENSOR CALIBRATION AND DEFORMATION ESTIMATION OF FBG-EQUIPPED UNMODELED CONTINUUM MANIPULATORS  
2019, IEEE Transactions on Robotics (T-RO).

AUTONOMOUS TISSUE MANIPULATION VIA SURGICAL ROBOT USING LEARNING BASED MODEL PREDICTIVE CONTROL  
2019, IEEE International Conference on Robotics and Automation (ICRA).

AUTONOMOUS SUTURING VIA SURGICAL ROBOT: AN ALGORITHM FOR OPTIMAL SELECTION OF NEEDLE DIAMETER, SHAPE, AND PATH  
2017, IEEE International Conference on Robotics and Automation (ICRA).

TORQUE CONTRIBUTION TO HAPTIC RENDERING OF VIRTUAL TEXTURES  
2017, IEEE Transactions on Haptics.

## HONORS & AWARDS

2017	Best Poster Award	Southern California Robotic Symposium
2016	Best Poster Award	UCLA Industrial Advisory Board
2016	UCLA	Departmental Fellowship (Duration: 2 years)
2015	University of Hawaii	Everett E. Black Scholarship (Duration: 1 year)
2007	126/400,000	Iranian National wide University Entry Exam
2007	15/400,000	Iranian National Azad University Entry Exam
2006	1st/10,000	National wide Mathematical Concept Contest
2006	top 150/1000	Iranian National Mathematics Olympiad Semi-finalist
2005	top 150/1000	Iranian National Mathematics Olympiad Semi-finalist