JOE KARAM

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| karamjoe | joekk13 |

EDUCATION

The Pennsylvania State University *August 2022*
Masters of Engineering in *Engineering Design*

California State University – Chico *Jan 2019 – May 2021*
Bachelor of Science in *Mechanical Engineering*
3.085 Cumulative GPA (3.6 during junior and senior years)

Lebanese American University – Byblos (Lebanon) *Aug 2015 – Dec 2018*
Course Emphasis in *Mechanical Engineering*

PROFESSIONAL EXPERIENCE

Undergraduate Research Assistant *Mar 2020 – Dec 2020*
California State University - Chico *Chico, CA*
- Researched the design exploration of indoor agricultural systems
- Assisted the faculty in executing algorithms (3D convex hull) and monitoring the resulting data

Control Systems Design Grader *Oct 2020 – Dec 2020*
California State University – Chico *Chico, CA*
- Evaluated student assignments (homework/exams) related to this course

Industrial Internship *Jul 2019 – Aug 2019*
Phoenix Machinery s.a.l *Tabarja, Lebanon*
- Modeled a firefighting hydrant system for Phoenix's plant
- Collaborated in HVAC and plumbing projects for industrial applications
- Enhanced my skillset in "Elite Fire Software" and "AutoCAD"

PROJECTS

Compliant and Intelligent Grasping with Parallel Kinematic Mechanism and its Agricultural Application
- Designed the chassis with both static and dynamic analysis
- Implemented transformation matrices and velocity predictions (timing) in the main code
- Optimized and analyzed the budget for the whole project

Robotic Collaboration for Timber Construction (MECA-470 Robotics Engineering Project)
- Developed and organized a 17 Degree of Freedom system based on ETH Zurich's work
- Provided a controller for the system in python and established a connection to ROS
- Algorithm (automation in construction) work in progress in Grasshopper (CAD, Rhino with GH)

Design Exploration for Indoor Agricultural System (Summer 2020 Research)
- Generated a geometrical simplification algorithm for various plant geometries in Rhino (3D convex hull)
- Researched towards geometrical optimization (light, reachability) for plant placements

CORE TECHNICAL SKILLS

Languages: English (Fluent), French (Fluent), Arabic (Native)

Software: Rhino 6.0 (with Grasshopper), SolidWorks, nTopology, NI LabView 2019, Autodesk Fusion 360, Siemens NX, CoppeliaSim (former V-Rep), Robo DK 5.0, ROS 1.0 (some certifications can be found in my LinkedIn "Licenses & certifications" section)

Languages (Programming): Python, R (statistical computing), Arduino, MATLAB