JOE KARAM

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| karamjoe | joekk13 |

EDUCATION

The Pennsylvania State University *Aug 2021 – Aug 2022*
Masters of Engineering in *Engineering Design*
3.85 Cumulative GPA

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

Additive Manufacturing (AM) Internship *May 2022 – Aug 2022*
Craftnetics Inc. *Remote (Roseville, CA)*
- Working on a patent-pending computational add-on for AM in Autodesk Fusion 360
- Using CAD API to develop the tool's front and back end (python)

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)

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

The Learning Factory's Vending Machine (PSU Learning Factory)
- Lead the software/electrical team in controlling, wiring, and programming a vending machine
- Followed human-centered design to target a specific population's preferences and needs

Compliant and Intelligent Grasping with Parallel Kinematic Mechanism (Capstone)
- Designed the system's 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)

**** please visit my personal website for a detailed view (+more projects)***

CORE TECHNICAL SKILLS

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

CAD Software: Rhino 6.0 (with Grasshopper), SolidWorks, Autodesk Fusion 360, nTopology

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

Extra Design Skills: Parametric, Human Variability (Anthropometric), Additive Manufacturing