JOE KARAM

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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

Computational Design Internship *May 2022 – Aug 2022*
Craftnetics Inc. *Remote (Roseville, CA)*
- Worked on a patent-pending computational add-on for continuous and automated Additive Manufacturing
- Developed web-based front and back-end using CAD API

Undergraduate Design Research Assistant *Mar 2020 – Dec 2020*
California State University - Chico *Chico, CA*
- Utilized Grasshopper as a visual programming language to develop a 3D convex hull algorithm
- Implemented the algorithm in Rhino to minimize geometric models file sizes (optimize computational power)

Industrial Internship *Jul 2019 – Aug 2019*
Phoenix Machinery s.a.l (INDEVCO) *Tabarja, Lebanon*
- Modeled a firefighting hydrant system for Phoenix's plant
- Collaborated in HVAC and plumbing projects for industrial applications
- Enhanced my skillset in Computer-Aided Design (Solidworks, AutoCAD)

PROJECTS

The Learning Factory's Vending Machine (PSU Learning Factory) *Aug 2021 – May 2022*
- Lead the software/electrical team in controlling, wiring, and programming a vending machine
- Followed human-centered methods (interviews, user-testing) to target a specific population's needs
- Underwent various prototyping iterations to generate a transferable, reliable, user-friendly, and engaging end product

Design for Additive Manufacturing (DfAM) *Aug 2021 – Dec 2021*
- Created a DfAM framework (interactive tool) that helps beginners print successful end products
- Studied and applied opportunistic and restrictive concepts to design for 3D printing
- Executed rapid prototyping and version control to produce complex parts/assemblies

Compliant and Intelligent Grasping with Parallel Kinematic Mechanism *Aug 2020 – May 2021*
- Modeled the system's chassis while analyzing both static and dynamic FEA (Solidworks)
- Implemented detailed dimensioning/tolerancing (along with DFM) and successfully built the robot's chassis
- Optimized expenses (budgeting, detailed BOMs) and completed 2D CAD drawings for the whole project

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

CORE TECHNICAL SKILLS

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

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

Languages (Programming): Python, R (statistical computing), Arduino, Front-End (HTML, CSS, JavaScript)

Extra Design Skills: Human-Centered, Parametric Design, Additive Manufacturing (3D printing), Human Variability, Rendering, FEA (static and dynamic), Data Manipulation, Drafting, Automation (motors)