Konstantinos Morakalis

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Education

University of Illinois at Urbana-Champaign **Expected Graduation Date: May 2022**
Bachelor of Science in Aerospace Engineering **GPA: 3.48/4.00**

Skills

Software: CFD (Fluent) and FEA, *ANSYS*, CAD (*Siemens NX, AutoCAD, SolidWorks*), 3D Printing (built printer from spare parts)
Mechanical: DMLS Additive Manufacturing
Programming: *MATLAB,* Python, Controls, Numerical Methods
Other: Byzantine Chanting, Modern Greek (fluent), Bouzouki (Greek Instrument), Amateur Astrophotography

Work Experience

Relativity Space **Long Beach CA**
Additive Development Engineer I ***June 2022-***
Additive Manufacturing Intern ***May-August 2021***

- Printed Aeon 1 engine components to support Terran Mission 1
- Owned post printing quality inspection process for Aeon 1 Thrust Chamber Assembly hardware

Metropolitan Water Reclamation District of Greater Chicago **Chicago IL**
Mechanical Design Intern ***June-August 2019***

- Designed a modernized Central Boiler Facility to replace an aging facility using AutoCAD MEP
- Used data analysis to project the Hanover Plant's daily energy consumption to determine optimal boiler configuration
- Ensured new boilers will enable full capacity sewage treatment (22 million gallons/day) in worst case scenarios

Project Highlights

THRUST **Champaign, IL**
Technical President ***May 2021-May 2022***

- Principal Engineer of all club vehicles, systems, and engines and responsible for testing, safety, and launch procedures and approvals

Director of Structures ***May 2020-May 2021***

- Developed a manufacturing process to produce 1/16th inch aluminum 6061-T6 bulkheads for cryogenic propellant tanks pressurized to 90 psi

Project Manager of Engine Integration ***August 2018-August 2021***

- Led a multidisciplinary team of engineers in design and fabrication of flight worthy fuel and oxidizer tanks for a reusable liquid fueled rocket capable of reaching the Karman Line (100 km altitude)
- Utilized Siemens NX for design and ANSYS Static Structural for structural analysis and to validate hand calculations on LOX and RP-1 propellant tanks

American Institute of Aeronautics and Astronautics **Champaign, IL**
JetCat Co-lead ***May 2020-May 2022 (Member since August 2018)***

- Designed high efficiency converging-diverging nozzles in Solidworks and used ANSYS Fluent to do CFD analysis
- Attained supersonic flow rate of 755 m/s and eliminated shocks in nozzle throat to stabilize flow

New Space Chicago Mars City State Team **Chicago, IL**
Technical Team Report Crafter ***April-June 2020***

- Generated a Master System Diagram of a Martian settlement capable of supporting 1,000,000 people for the Mars Society's Mars City State Competition
- Authored technical sections of final competition report with collaboration from several team members