

# ORESTIS OUSOULTZOGLOU

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## WORK EXPERIENCE

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### EMTech Space

Research Software Engineer

Hybrid

Jan 2024 – Present

### Democritus University of Thrace - DUTHSat-2

Research Software Engineer

Remote

Dec 2023 – Present

Project between European Space Agency, companies & universities consortium.

Nanosatellite mission to detect oil slicks and marine contamination, and monitor agriculture through soil moisture detection.

- Designed and implemented high fidelity models for attitude control, simulator interface across domains

### Aristotle University of Thessaloniki - Hellenic Space Dawn

Research Software Engineer

Remote

Mar 2023 – Present

Project between European Space Agency, companies & universities consortium, Greek Navy.

Nanosatellite constellation, inter-satellite optical communication and earth observation.

- Designed and implemented high fidelity models for attitude control, simulator interface across domains
- Designed and implemented high fidelity software for in-orbit power generation, verified against industry standard

## EXPERIENCE

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### SpaceDot

Science Lead

Thessaloniki, Greece

Mar 2022 – Present

Project in collaboration with the European Space Agency (ESA), team of 70+ members across the EU.

Nanosatellite to probe the combined effects of microgravity and cosmic radiation on 100+ genetically engineered eukaryotic cell strains. The organisms will grow in-orbit inside a miniaturized lab-on-a-chip.

- Leading a 25 member team of interdisciplinary scientists and engineers to realize a Space Biology mission 5 years in the making

### SpaceDot

Research Software Engineer

Thessaloniki, Greece

Mar 2020 – Mar 2022

- Designed and implemented Gene Expression Analysis pipelines
- Implemented on-board compression scheme for data downlink
- Designed a microfluidic Lab-on-a-Chip for multiplexed cell culturing in collaboration with EPFL (LBNC)
- Designed a miniaturized imaging system for fluorescence imaging

### SpaceDot

Software Engineer

Thessaloniki, Greece

Apr 2019 – Mar 2020

- Wrote mission-critical, performant C++ to be run on-board
- Set up containerized CI/CD pipelines for deployment and code verification
- Set up pipelines for fuzzy testing and abstract interpretation static analyzers
- Designed the system architecture (MCU scheme, filesystem, OS, communication protocols, etc.)
- Worked with non-SEs in modeling and simulation of attitude control and determination, trajectory & spacecraft communication domains

### GFOSS

Software Engineer

Thessaloniki, Greece

Oct 2018 – Jun 2020

GFOSS is the largest FOSS organization in Greece. I was selected as a member of its "Unit of Excellence", a team of students from member universities

## EDUCATION

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### Aristotle University of Thessaloniki

Bachelor of Science in Computer Science

Thessaloniki, Greece

Oct 2019 – Jun 2024

- **Minors:** Scientific Computing, Artificial Intelligence

## SKILLS, LANGUAGES, INTERESTS

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- **Programming Languages:** Julia, C++, Python, C, Java, R, Shell
- **Tools:** Git, Docker, CI/CD (various)
- **Soft Skills:** Leadership, Technical Writing
- **Languages:** English (Bilingual), Greek (Native)
- **Interests:** Cooking, Dungeons & Dragons, Piano, Brazilian Jiu Jitsu

## LAST CONFERENCES

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### European CubeSat Symposium 2023 (withdrawn)

Leuven, Belgium

Oral presentation: *AcubeSAT: Advancing Space Biology Research Through CubeSat Technology*

Dec 2023

### JuliaCon Local Eindhoven 2023

Eindhoven, Netherlands

Oral presentation: *AOCS Simulations with Julia: Insights from the Hellenic Space Dawn Mission*

Dec 2023

### European Space Thermal Engineering Workshop 2023

Amsterdam, Netherlands

Oral presentation: *Thermal control design for AcubeSAT's biological experiment and proposed model correlation method*

Oct 2023

### JuliaCon 2023

Boston, MA, USA

### European Lisp Symposium 2023

Amsterdam, Netherlands