

# Michael Cebal

## Research Engineer / Science Communicator

### CONTACT

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**Extremely passionate** about science and space. I give talks for students and youth groups, and **prepare outreach materials** adapted to each audience. Solid experience as a **public event speaker** and as **design coordinator**, managing the visual identity and communication materials of several projects.

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### RELEVANT EXPERIENCE

#### Research Engineer

Nov 24 – Aug 25

Giacomello Lab | ScilifeLab (KTH)

- Delivered analysis reports on spatial transcriptomics data from **NASA Rodent Research 9** muscle and bone samples, to characterise adaptation to microgravity.
- Built **reusable R and Python pipelines** to process and integrate biological datasets, providing reproducible workflows and visual outputs for the group.

#### Research Assistant

Mar 24 – Jun 24

Anna Rising Lab | Karolinska Institutet Bioscience Unit

- Produced **recombinant spider-silk proteins** and assembled 3D scaffolds as low-TRL biomaterial prototypes for cell culture experiments.
- Generated **protocols and summary plots** for the structural characterisation of these materials, ensuring results were easy to interpret and reuse.

#### Research Intern

Jul 22 – Sep 22

Pereira-Acedo Lab | ILDH (University College London)

- **Generated and maintained 3D tumour spheroids** and produced summary reports to test novel photosensitive therapeutic compounds in a complex preclinical model.
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### EDUCATION

#### International Space University (ISU)

Aug 25 – Feb 27

Master's in Space Science – Space Business and Entrepreneurship

- Full MSS Scholarship awarded by Barrié Foundation

#### Karolinska Institutet (KI)

Aug 23 – Aug 25

Master's Program of Biomedicine (*Grade: VG*)

- Full MSc Scholarship awarded by "La Caixa" Foundation

#### European Space Agency (ESA)

Jun 24

ESA/ELGRA Gravity Related Research Summer School (*Grade: A*)

#### Universidad de Santiago de Compostela (USC)

Sep 19 – Jul 23

Bachelor's Program in Biotechnology (*Grade: 9.2/10*)

- Academic Excellence Scholarship

## RELEVANT PROJECTS

### GARN PROJECT – Gravity Adaptation Research with noisy GVS

ESA Academy Experiments Program Applicant

- Designed a **parabolic flight experiment** using noisy galvanic vestibular stimulation as a motion sickness countermeasure in altered gravity.
- Developed a **VR-based MATLAB tool** to fix subjects' gaze and isolate the gravity stimulus, delivering a usable experimental interface for flight operations.
- Acted as **Project Manager** and coordinated the full submission package to the ESA Academy Experiments Programme.

### ROADMAP PROJECT – Communication Roadmap for Deep Space Human Exploration

International Space University Team Project

- Co-developed a **communication roadmap** for future lunar and Mars missions delivering a structured strategy document for different audience groups.
- Produced concrete **outreach deliverables** to explain complex mission architectures to both technical and non-technical stakeholders.

### AI FOR ASTROPHYSICS – Interactive Web Platform for AI in Planetary Sciences

International Space University Team Project

- Delivered an interactive educational website that uses AI/ML examples and public Kepler/JWST datasets to explain core astrophysics concepts to non-expert users.
- Implemented the full web stack, focusing on clear navigation, readable plots and concise explanatory text.

### INTERSTELLAR OBJECTS & RISK PERCEPTION – Communication Case Study

International Space University Individual Research Project

- Produced a **structured report** on the discovery timelines and communication of interstellar objects ('Oumuamua, Borisov, ATLAS), from first alerts to public headlines.
- Mapped how risk and scientific results were translated for non-expert audiences and **formulated practical messaging guidelines** to improve future communication.

## ADDITIONAL SKILLS

### COMMUNICATION & COLLABORATION

- Deliver **regular talks on science** for youth and general public, preparing tailored slides, live demos and simple visual supports for diverse audiences.
- Volunteer **Design Coordinator for TEDxKI**, responsible for visual identity, slide templates, event signage and social media graphics in collaboration with speakers.
- **Speaker for the ROADMAP project**, presenting the communication strategy and key messages to mixed expert and non-expert audiences.

### TECHNICAL & ANALYTICAL

- Experienced camera operator and licensed FPV Drone Pilot
- Python, R, MATLAB, basic C++; for **data analysis and experiment support**.
- **Proficient in design and media tools:** Photoshop, Illustrator, Premiere Pro, After Effects, Procreate, Canva and PowerPoint among others.

### LANGUAGES

- Spanish & Galician (native), English (C1), Portuguese (C1), French (A2).