Joshua Springer

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Education

PhD, Computer Science

August 2022 - Current

Reykjavik University

Reykjavik, Iceland

Publications & Grants:

- *Reykjavik University Infrastructure Fund 2023:* Matrice 300 RTK Drone with Thermal Camera
- *International Journal of Semantic Computing:* Autonomous Drone Landing: Landing Pads and Lava Flows
- *Reykjavik University Research Fund 2023:* Precision Drone Landing Methods for Autonomous Mars Exploration
- *IEEE International Conference on Robotic Computing (IRC):* Joshua Springer and Marcel Kyas. *Autonomous Drone Landing with Fiducial Markers and a Gimbal-Mounted Camera for Active Tracking*. 2022. DOI: `10.48550/ARXIV.2206.04617`
- *IEEE IRC New Frontiers in Computational Robotics Workshop:* Joshua Springer and Marcel Kyas. *Evaluation of Orientation Ambiguity and Detection Rate in April Tag and WhyCode*. 2022. DOI: `10.48550/ARXIV.2203.10180`
- *IEEE IRC PhD Workshop:* Joshua Springer. *Autonomous Multirotor Landing on Landing Pads and Lava Flows*. 2022. DOI: `10.48550/ARXIV.2211.06332`

Double MSc, Computer Science

September 2018 - May 2020

Reykjavik University

Reykjavik, Iceland

Mälardalen University

Västerås, Sweden

- *Thesis:* Joshua Springer. *Autonomous Landing of a Multicopter Using Computer Vision*. 2020. URL: `http://hdl.handle.net/1946/36422`
- Developed ROS modules to autonomously land simulated drone while actively tracking multiple kinds of fiducial markers in Gazebo 9.

BSc, Computer Engineering

August 2011 - December 2016

Louisiana State University

Baton Rouge, United States

BA, French Language

August 2011 - December 2016

Louisiana State University

Baton Rouge, United States

Work Experience

2022 Fieldwork

July 2022

RAVEN, NASA, JPL

Dreki & Holuhraun, Icelandic Highlands

- Collected terrain data from a drone-based stereo depth camera over Holuhraun lava flow.
- Executed manual and autonomous drone missions in the field.
- Assisted in collection of LIDAR terrain data and doppler LIDAR dust data from drone propeller wash.
- Assisted in collection of hyperspectral data describing chemical makeup of various locations of interest.
- Cooperated with interdisciplinary team of geologists and planetary scientists to set up and tear down camp, long-range WiFi connection.

2021 Fieldwork

July 2021

RAVEN

Fagradalsfjall Volcanic Eruption

- Assembled heavy-lift drone with thermal camera (FLIR A615), collected thermal data over active lava flow
- Featured on BBC Click: `https://www.bbc.co.uk/programmes/p09r8nzv`

IT Analyst, Integration Development

February 2017 - August 2018

LSU Information Technology Services

Baton Rouge, United States

- Created, and managed production deployment of reports and integrations in Workday and other platforms.
- Administered and maintained integration platform servers.
- Communicated with clients and team for requirements and troubleshooting.
- Created and optimized simple to complex SQL queries and tables.

System Administration Team Member

January 2016 - December 2016

LSU High Performance Computing Services

Baton Rouge, United States

- Managed computational loads on 6 RHEL supercomputing clusters.
- Performed cluster-wide software upgrades and hardware repairs.
- Troubleshot hardware issues and carried out repairs.

Skills

Programming Python (Pandas, PyTorch, NumPy, SciPy), C++, Embedded C, SQL.

Miscellaneous Linux, Bash, LaTeX, Git.

Soft Skills Time Management, Teamwork, Problem-solving, Documentation, Engaging Presentation.

Languages English: Native, French: B2