

Océane Boulais

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EDUCATION

Master of Media Arts and Sciences | *Computational Innovations for Fisheries* Aug. 2018 – September 2020
Massachusetts Institute of Technology (GPA 5.0/5.0) Cambridge, MA

Bachelor of Science | *Major: Electrical Engineering, Minor: Computer Science* Aug. 2013 – May 2018
Florida Atlantic University, Cum Laude (GPA 3.7/4.0) Boca Raton, FL

Certificate of Renewable and Sustainable Energy Technology Fall 2015
Iceland School of Energy, Reykjavik University Reykjavik, Iceland

EXPERIENCE

Research Engineer I November 2020 – Present
Northern Gulf Institute/National Oceanic and Atmospheric Administration Starkeville, MS

- Managing a team of developers to deploy semi-supervised learning algorithms for automated species identification and length estimation of reef fish in the Gulf of Mexico.
- Co-designing the data pipeline for NOAA's first National Image Library comprised of electronic monitoring imagery.
- Designing the data analysis pipeline on Google Cloud Platform for real-time and on-vessel bycatch detection of shrimp trawler fleets with the Southeast Fisheries Science Center.

Research Intern May 2020 – August 2020
NASA and SETI Frontier Development Lab Mountain View, CA

- Performed data wrangling and evaluation metric development for the generative vision to predict flooding on the US East Coast. Demo at trillium.tech/eie/

Researcher December 2019 – September 2020
Responsive Environments and Viral Communications Research Group Cambridge, MA

- Surveyed and compiled a dataset of blockchain-enabled fishery pilots to assess feasibility of the innovation in seafood supply chains.
- Trained a multi-object tracking and classification model that stored accuracy probabilities on safety objects to efficiently perform scene assessment of video data from the main deck on industrial tuna fishing fleet vessels for fishermen safety.
- Co-built a collaborative social experiment using generative adversarial neural networks to interact with new "species", and enables breeding of one's own.
- Designed and co-built a decentralized internet platform, CivicLink, that aimed to serve communities in their efforts to own intra-organizational data.

Hardware Engineering Intern Summer 2017
Facebook Menlo Park, CA

- Led the characterization and testing of the reliability of key data center server components and scripted experiments for polling, logging and parsing data from each testing cycle.

Research Assistant Summer 2015
Pratt School of Electrical Engineering Durham, NC

- Deployed experiments using RIR-MAPLE (Resonance infrared matrix-assisted pulsed laser evaporation) to build hybrid organic-inorganic solar fuel cells in the Dr. Adrienne Stiff-Roberts Lab.

SKILLS

Languages: English and French (Native), Spanish (B1)
Programming: *Intermediate:* Google Cloud Platform, Tensorboard, LaTeX, C, C++.
Novice: Python, MATLAB, Visual Studio, SQL
Hardware: Eagle, AutoCAD, Inventor, SolidWorks, Verilog (FPGA), Roland GS-24, Arduino
Selected Coursework: Modeling and Applied Machine Learning (MIT), Field Oceanography Research (MIT), How to Make Almost Anything (MIT), Data Structures (FAU), Digital Signal Processing (FAU), Thermal Systems (Reykjavik)
Activities: Certified PADI Advanced Open Water Diver, Certified Paragliding Pilot (Stage 3)

COMMUNITY INVOLVEMENT AND SERVICE

NOAA Grant Proposal Reviewer	Spring 2021
Reviewed FY21 Small Business Innovation Research proposals	Starkeville, MS
Teaching Assistant, MIT	Fall 2018 - Fall 2019
Blockchain Ethics and Scalable Civic Action	Cambridge, MA
STEAM Engineering Mentor	Fall 2015 - Fall 2016
Held weekly creative coding workshops for middleschoolers in underrepresented regions	Broward County, FL

PUBLICATIONS

FathomNet: An underwater image training database for ocean exploration and discovery	2020
Boulais, O. , Woodward, B., Schlining, B., Lundsten, L., Barnard, K., Bell, K. C., Katija, K.	
Pre-print available http://arxiv.org/abs/2007.00114	
Blockchain in Fisheries: The Good, Bad and Yet to be Proven	2020
Boulais, O. , Hardt, M., Kittinger, J.	
Under Review at <i>CellPress</i>	
Physics-informed GANs for Coastal Flood Visualization	2020
Lütjens B., Leshchinskiy B., Requena-Mesa C., Chishtie F., Díaz-Rodríguez N., Boulais, O. , Piña A., Newman D., Lavin A., Gal Y., Raïssi C.	
Under Review at <i>IEEE Transactions on Neural Networks and Learning Systems</i> Pre-print available https://arxiv.org/abs/2010.08103	
Interpolating GANs to Scaffold Autotelic Creativity	2020
Epstein, Z., Boulais, O. , Gordon, S., Groh, M.	
<i>11th International Conference on Computational Creativity</i>	
Global Standards Mapping Initiative : An overview of blockchain technical standards	2020
Boulais, O. , Deshmukh, S., Koens, T.	
<i>World Economic Forum, Global Blockchain Business Council</i>	
Leader and Global Professional Engineer Competences and Development in our Students	2015
Boulais, O. , M. E. Torres, J. R. Solano, A. C. Solano, J. D. Ramirez and M. M. L. Petrie	
<i>IEEE Revista Iberoamericana de Tecnologías del Aprendizaje, DOI: 10.1109/RITA.2015.2452652.</i>	

CONFERENCES AND PRESENTATIONS

Final Research Presentation: Earth Intelligence Engine	August 2020
Frontier Development Lab	tinyurl.com/fdlpresentation
Ganimals: The Underwater Sea Creatures of Our Computational Dreams	February 2020
Ocean Sciences Meeting, Imagining Ocean Science: Education and Outreach	animals.media.mit.edu
Stone to Sea	July 2019
11th International Conference on Computer Vision, Computer Vision Art Gallery	stonetosea.github.io
Integrating Art with STEM Education	March 2015
TEDxBoca Raton	youtu.be/DjpWQkmopgY

HONORS AND FELLOWSHIPS

Conservation International/Northrop Grumman Fellowship	2019
Merit based grant for the research of AI-enabled fisheries management in the Pacific Islands	
Ocean Exploration Fellow, MIT Open Ocean Initiative/National Geographic	2019
Merit based grant to co-deploy drop cameras in the Galapagos for benthic mapping	
Elements Fellowship, MIT Media Lab	2018
Merit based scholarship to support thesis research and conference travel	
IEEE Power and Energy Society Plus Initiative & Schweitzer Meritorious Scholar	2014 - 2016
Nation-wide and reoccurring merit based scholarship given to the highest GPA-scoring engineering student	
FAU Student Talon Award	2018
A nominated & university-wide award for one student who demonstrated leadership and academic prowess	