# FLORIAN **LALANDE**

OIST South Hill H210, Tancha, Onna, Okinawa · (+81)80 7492 7442

**florian.lalande@oist.jp**

*Nearing the end of my Ph.D between Machine Learning and Astronomy,*
*I am looking for a full-time position in ML and R&D in Japan.*

## RESEARCH EXPERIENCES

**2023**

**OMRON SINIC X - TŌKYŌ, JAPAN**

INTERNSHIP

- Develop a Transformer model for Symbolic Regression towards automatic scientific discovery
- → Oral presentation at NeurIPS 2023, AI 4 Science Workshop, 16 Dec. 2023

**2020 - 2023**

**TŌKYŌ UNIVERSITY - TŌKYŌ, JAPAN**

INVITED RESEARCHER

- Build a Graph Neural Network to automatically rediscover Neptune
- Develop a CNN model for long-transiting exoplanets detection from Kepler satellite light curves
- Simulate triple-systems evolution and predict their stability with CNNs
- → Published paper in The Astrophysical Journal, 2022

**2019**

**EUROPEAN SPACE AGENCY (ESA) - MADRID, SPAIN**

RESEARCH ENGINEER

- Develop a Bayesian network and use MCMC inference to date open stellar clusters
- Identify stellar cluster members with a Bayesian network, application to the Pleiades

**2018**

**COSMOSTAT LABORATORY - PARIS, FRANCE**

INTERNSHIP

- Image processing using Wavelet transforms on dark matter convergence maps (Euclid satellite)
- Develop a CNN model to differentiate between cosmological models
- → Published paper in Physical Review, 2019

# EDUCATION

**2019 – PRESENT**

### OKINAWA INSTITUTE OF SCIENCE AND TECHNOLOGY - OKINAWA, JAPAN

PH.D / CO-SUPERVISION: KENJI DOYA (OIST) AND ELIZABETH TASKER (JAXA)

- Develop and benchmark a novel numerical data imputation algorithm
- → <u>Two published papers: SISAP, 2022 and TMLR, 2023</u>
- Estimate exoplanets unknown mass
- Perform statistical analysis of the Exoplanet population, identify candidates for future missions

**2018**

### UNIVERSITY OF RENNES 1 - RENNES, FRANCE

MATHEMATICS & APPLICATIONS, SPECIALTY STATISTICS & PROBABILITY

- MCs in Mathematics & Applications. Major in Statistics & Probability Theory

**2015 – 2018**

### ENSAI - RENNES, FRANCE

ENGINEER IN STATISTICS AND INFORMATION PROCESSING

- Engineering Diploma in Statistical Engineering
- Erasmus+ (exchange program) at Queen Mary University of London - London, UK

# SKILLS

- **Python**, **TensorFlow, PyTorch, Scikit-Learn** (8+ years experience)
- **GPU programming** (5+ years experience)
- R, MATLAB, SAS, JAVA (2 years experience)
- HTML/CSS (3 years experience)

- French – Native
- English – High Proficiency
- Japanese – 日本語能力試験 N2

# ACTIVITIES & INTERESTS

### SCIENTIFIC TALK:

- **Nobel Turing Challenge Initiative Workshop**, Tōkyō, Japan
- **NeurIPS 2023**, New Orleans, US
- **SISAP 2022**, Bologna, Italy
- **OIST Research Appreciation Month 2021**, Okinawa, Japan

### TEACHING:

**Teaching Assistant at OIST - Okinawa, Japan**

- Vectors and Tensors Calculus for Eliot Fried (2022)
- Statistical Methods for Kenji Doya (2021)

**Multiple times volunteer speaker at Hope Academy - Okinawa, Japan**

- Overview of the Solar System. Introduction to exoplanets. Detection methods

**Private Maths and Physics tutoring**

- High school students (France) and Bachelor level (Okinawa, Japan)