

# Adrià Garriga-Alonso

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## EDUCATION

**PhD with Prof. Carl E. Rasmussen.** Machine Learning Group, University of Cambridge 2017 – 2021

Garriga-Alonso, Adrià, Carl Edward Rasmussen, and Laurence Aitchison. “[Deep convolutional networks as shallow Gaussian processes.](#)” Accepted as a poster at ICLR 2019. Poster presented in the NeurIPS 2018 “Bayesian deep learning” workshop.

**MSc Computer Science.** University of Oxford. Grade: Distinction. 2016 – 2017

Chosen topics: probabilistic verification, deep learning, computational learning theory, automatic reasoning.

Thesis: “Probability density imputation of missing data with Gaussian Mixture Models”. Using density estimation methods that do not require fully specified points to perform imputation.

Supervisor: Prof. Mihaela van der Schaar.

**BSc Computer Science.** Universitat Pompeu Fabra (UPF), Barcelona, Spain 2012 – 2016

Grade average: 9.02/10. 1<sup>st</sup> of my class of 67, class grade average 6.90/10.

– **Thesis:** “Solving Montezuma’s Revenge (MR) with Planning and Reinforcement Learning (RL)”.

Supervisor: Anders Jonsson. The objective was understanding how to address the problem of sparse rewards.

Using reward shaping, I trained RL agents to play MR. Using search, pruning with domain-specific heuristics, I designed an agent that obtains 14900 score, compared with 3500 of general-purpose agents at the time.

**Erasmus exchange semester.** Karlstad University, Karlstad, Sweden January – July 2016

– With Prof. Johan Garcia, I improved by 47% the performance of part of a forensic hard drive scanner.

## EXPERIENCE

**Research Assistant.** Music Technology Group, UPF Summer 2015

Under the supervision of Prof. Rafael Ramírez, developed a web application to help music students practice. It listens to the student’s playing or singing and compares it to an expert’s, while showing visual representation.

**CTO, cofounder.** MonkingMe.com July 2014 – June 2015

Designed and implemented web application backend and cloud server infrastructure for a music streaming service. Significantly contributed to web interface. Achieved very low hosting costs: no cost with about 10 simultaneous users, scalable to thousands. Coordinated development of smartphone application.

**R&D Intern.** Big Arm Applications November 2013 – June 2014

Developed communication protocol between an x86 computer and a Stäubli robot arm. Programmed arm to interact with users via a web portal and a mobile application, using a webcam, and to play a metallophone.

**Teaching:** undergraduate tutoring and labs in [\[Statistical\] Inference](#) (2017-2018), [Statistical Signal Processing](#) and [Probabilistic Machine Learning](#) (2018-2019).

## AWARDS

**Malmo Collaborative AI Challenge** by MSR. 1st & 3rd places, different categories. June 2017

Paid attendance to the Microsoft Research (MSR) AI Summer School. Up to \$20,000 in Azure credits.

**La Caixa Fellowship** for postgraduate studies in Europe. 6.6% acceptance rate. 2016 – 2017

Full tuition and living costs. Awarded Spain-wide, on academic merit and positive impact of personal project.

**María de Maeztu Award for Reproducibility** in Software. September 2016

Best Bachelor’s thesis about information technology in Spain meeting scientific reproducibility criteria.

**LANGUAGES** Fluent Catalan, Spanish, and English; basic German, Swedish, and Lojban.

## ADDITIONAL ACTIVITIES

Co-organising the ICLR 2019 workshop “[Safe Machine Learning: Specification, Robustness, and Assurance](#)”.

Leading and planning the [Engineering AI Safety reading group](#) with the Effective Altruism Cambridge society.

Speaking: Microsoft AI+Pizza series: [Deep convolutional networks as shallow Gaussian processes.](#)

Competitive programming team member. Conducted unofficial training sessions. Our team set record in UPF for number of problems solved, placing 24/52 in SWERC 2015. Also participated in SWERC 2014.