Paul Schydlo

Academically inclined analytical thinker with a focus on machine learning applied to robotics.

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INTRO

I have recently graduated from a **Master in Electrical and Computer Engineering with a major in Systems, Control and Decision theory (Robotics).** Throughout my education I could obtain a blend of theoretical and practical in experiences as an **undergraduate researcher in the Institute for Systems and Robotics in Lisbon** and as a **machine learning instructor** in several venues such as the Google backed **Lisbon Machine Learning School and the Data Science Starters Academy**, among others, these taught me unique analytical and problem-solving capabilities in the field of humanoid robotics and modern machine learning techniques. More recently **co-founding the Machine Learning Academy in Lisbon** further cemented my knowledge in the field.

My Master thesis was on the topic of human action prediction in the context of human robot cooperation, the results of this work were published in the **International Conference on Robotics and Automation** and won the **best national master thesis award from the Portuguese Robotics Society**.

Academically, my **primary focus is cognitive robotics**, robotics systems that learn, through modern machine learning techniques, to interact with their environment. Within cognitive robotics, I specialize in human robot cooperation and applied machine learning techniques. For this reason, I would like to **continue this path at a company with a strong focus in self learning systems**, applying the expertise I've acquired during my past experiences in the field.

EDUCATION

2012 - 2017, **Integrated Master in Electrotechnical and Computer Engineering, Instituto Superior Técnico**, Lisbon

Bachelor. Strong background in mathematics, where I obtained top of the class grades in courses such as Linear Algebra (18/20), Signals and Systems (17/20), Statistics (16/20), Algorithms and Data structures (17/20), Complex analysis and differential equations (17/20), Control theory (17/20) and Management (19/20).

Major in Systems, Decision and Control Theory with a minor in Computer science. Strong focus on courses surrounding the field of Machine Learning with coursework in Artificial Intelligence and Decision Systems, Optimization, Machine Learning, Autonomous Systems (ROS based). Obtained top of the class grades in courses such as Convex Optimization (17/20), Digital Audio and Speech Processing (18/20), Information Systems and Databases (18/20), Dynamical Systems (17/20) and Robotics (16/20).

2016, **Technical University Delft**, Netherlands

Master in Systems and Control, exchange semester. Enabled me to attend courses such as Probabilistic Graphical Models, Knowledge Based Control (Reinforcement Learning among others) and Modern Robotics (Lie Groups) which do not exist at my home university. Grade average: 16/20. Relevant projects include the modelling and control of humanoid arms and gait movement, non-linear systems and adaptive control schemes.

EXPERIENCE

October 2016 - Present, **Institute for Systems and Robotics**, Undergraduate Research Grantee
Master thesis in the domain of human-robot cooperation. Developed a sequence to sequence model which anticipates future human actions from the movement history modelling the temporal relation between the human's actions and the surrounding objects. Participated in the European ACTICIPATE research project around

the topic of human robot cooperation. The research was developed on the European iCub humanoid robotics platform.

January 2017 – December 2017, **Lisbon Data Science Starters Academy**, Machine Learning Instructor
Lisbon Data Science Starters Academy is a non-profit group with the purpose of educating people about Data Science and Machine Learning theory and practice.

- Responsible for giving workshops on the topic of machine learning with an attendance of about 50 people.

January 2017 - Present, **Machine Learning Academy**, Co-Founder
Machine Learning Academy is a non-profit group with the purpose of educating people about Machine Learning theory and practice.

- Responsible for organising biweekly workshops with an average attendance of about 20 students, dealing with event logistics, theoretical material and external partner communications.

June 2015 - September 2015, **CardioID**, Data Science intern
CardioID develops hardware and algorithms to process heart signals from which they detect cardiac pathologies, identify individuals and drowsiness using machine learning techniques.

- Responsible for implementation of a feature selection algorithm for the identification of individuals through their Electro-Cardiogram in Python and a big data collection platform based on the European FIWARE cluster.

July 2014 - August 2014, **Faber Ventures**, Ruby Development Intern
Faber ventures is a venture capital firm specializing in tech start-ups. It is also a product/venture development company, explores opportunities to build, launch, and scale early stage digital businesses from concept to market.
- Integrated in early development team of a start-up (Hoko Links) at one of Portugal's biggest Venture companies. Responsible for development on backend server using the framework Ruby on Rails.

July 2010 - August 2010, **Morro Images**, Image Processing Intern
Image processing for film, studio integrated into Babelsberg Filmstudios, Berlin.

PUBLICATIONS

- 2018, *Anticipation in Human-Robot Cooperation: A Recurrent Neural Network Approach for Multiple Action Sequences Prediction*; Paul Schydlo, Mirko Rakovic, Lorenzo Jamone, José Santos-Victor; International Conference on Robotics and Automation 2018 (ICRA 2018)

HONOURS & AWARDS

- 2017 Portuguese Robotics Society, Best National Master Thesis in 2017
- 2016 Priberam Scholarship, Lisbon Machine Learning Summer School
- 2016 Academic Merit Diploma
- 2015 Academic Merit Diploma
- 2014 Innovation Awards: Winning team at Sinfo 2014
- 2014 Academic Merit Diploma
- 2013 Academic Merit Diploma
- 2012 Academic Merit Diploma
- 2009 Mathematics Olympics: Chosen out of 300 students to represent the municipality

<u>TEACHING EXPERIENCE:</u>

- 2017 Lisbon Machine Learning Summer School, Lab Instructor
- 2017 Lisbon Data Science Academy, Data Science Instructor
- 2017 Machine Learning Academy Lisbon, Machine Learning Tutorial Lead

<u>EXTRA CURRICULAR EDUCATION</u>

Summer Schools:

- 2017 Mathematics Winter School (Instituto Superior Técnico)
- 2016 Lisbon Machine Learning Summer School (Instituto Superior Técnico)
- 2016 Introduction to Entrepreneurship (Yes!Delft, Delft)
- 2015 Dynamical Systems Summer School (Calouste Gulbenkian Foundation, Lisbon)
- 2012 8ª Particle Physics Masterclasses (CERN, University of Algarve, Faro)

Online Courses:

- Probabilistic Graphical Models, Daphne Koller, Stanford University
- Machine Learning, Andrew Ng, Stanford University
- Natural Language Processing, Dan Jurafsky and Christopher Manning, Stanford University
- Introduction to Finance, University of Michigan

<u>LANGUAGES</u>

- German: Native
- Portuguese: Native
- English: Professional
- Spanish and Dutch: Elementary

<u>VOLUNTEERING EXPERIENCE</u>

September 2017, **IEEE Int. Conf. on Developmental Robotics 2017,** Registration and Workshop team

Responsible for welcoming attendees and assisting workshop organizers.

November 2016, **Web Summit**, Airport registration team
Responsible for welcoming and registering 100 attendees and speakers from all over the world on the first day of the event which greatly improved my teamwork and inter personal communication skills.

September 2014 - June 2017, **NAPE Técnico**, Mentor
NAPE is the official student support association at Instituto Superior Técnico, during my three years as a mentor I had the opportunity to:

- Help about 30 first year students and 10 international exchange students adapt to the university through regular meetings and supplying support material.
- Attend regular workshops on topics such as leadership, time management, mentoring, requirements management and negotiation.

April 2015 - October 2016, **Productized Conference,** Operations
Productized conference is an international training on product management and design thinking. During my one and a half years at Productized I had the opportunity of helping as:

- International speaker's escort from the venue to the airport and accommodation at the first conference which had an attendance of about 300 people.
- Check-in coordinator at the second conference which had an attendance of about 500 people and the presence of several international speakers.
- Mentor during the Start-up Pirates Hardware edition where I assisted about 12 teams in the creation of their hardware start-up ideas.
- Operations volunteer on setting up about 6 masterclasses with an average attendance of 50 people.

<u>PERSONAL</u>

June 2016, **Europe Hitchhiking**

After a successful Erasmus semester in the Netherlands I decided to take on one last challenge and hitchhiked in two weeks from the Netherlands to Portugal (2200km). This experience enabled me to meet and get to know people in cities around Netherlands, Belgium, France and Spain. This was a truly unique and perspective expanding experience which enabled me to identify my limitations and how to manage unexpected results, deal with uncertainty and be more problem-solving focused.

December 2017 – June 2018, **Asia Travel**

Travelled for 6 months across the Asian continent spending one month in India (where I had the opportunity to volunteer for a children English teaching project), Thailand, Vietnam, Malaysia and Indonesia. This travel experience was enriching both personally and culturally, exposing myself to different and completely new perspectives moving from one country to the next.