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# Carles Balsells Rodas

**About Me:** I am a 24 year-old student who is currently very interested in deep learning and computer vision. I like programming, practicing sports and I am passionate about technology.

## Education

**IMPERIAL COLLEGE LONDON, 2021 - Present**  
*London, United Kingdom*

**Ph.D in Computing**, 2nd year.

**KTH ROYAL INSTITUTE OF TECHNOLOGY, 2019 - 2021**  
*Stockholm, Sweden*

**Master of Science in Machine Learning**, 2 years.  
GPA: 4.0/4.0

**UNIVERSITAT POLITÈCNICA DE CATALUNYA, 2015 - 2019**  
*Barcelona, Spain*

**Bachelor's Degree in Informatics Engineering**, 4 years.  
Average grade: 8.19/10.0

**UNIVERSITAT POLITÈCNICA DE CATALUNYA, 2014 - 2019**  
*Barcelona, Spain*

**Bachelor's Degree in Engineering Physics**, 4 years.  
Average grade: 8.19/10.0

**INSTITUT SALVADOR VILASECA, 2012 - 2014**  
*Reus, Spain*

**Spanish Baccalaureate in Technological Sciences**, finished with honours. Average grade: 9.91/10.0

## Experience

**IMPERIAL COLLEGE LONDON, Oct '21 - Present**  
*Graduate Teaching Assistant*

**KTH ROYAL INSTITUTE OF TECHNOLOGY, Nov '19 - Aug '21**  
*Research Engineer*

- Working at the division of Robotics Perception and Learning (RPL) supervised by Hedvig Kjellström.
- Studied the generation of synthetic data relating human social interaction using probabilistic graphical models (Nov '19 - Mar '20).
- Master's thesis project: *Causal discovery in video data* (Mar '20 - Aug '21).

*Teaching Assistant (starting in Jan '21)*

- DD2420 Probabilistic Graphical Models course in VT21 term.

**UNIVERSITY OF TORONTO, Feb '19 - Jul '19**  
*Visiting Student (Research Award Recipient)*

- Working at the department of Computer Science, supervised by Sven Dickinson and Stavros Tsogkas.
- Bachelor's thesis project: *Joint object boundary and skeleton detection using convolutional neural networks*.

## **SELF-EMPLOYED, May '18 - Dec '18**

*Software Developer*

- Web page development using Django.
- Web scraping using Python.
- Simulations of financial markets using Basic.

## **GIESECKE & DEVRIENT, June '17 - Sep '17**

*Software Engineer (Internship)*

- Working as a mobile software developer (Android & iOS development).

## **Publications**

[1] Zhu, H., **Balsells Rodas, C.**, & Li, Y. (2022). Markovian Gaussian Process Variational Autoencoders. arXiv e-prints, arXiv-2207.

[2] **Balsells Rodas, Carles**, Canal Anton, Oleguer, & Taschin, Federico. (2021). [Re] Hamiltonian Generative Networks. Rescience C, 7(2), #18.

## **Scholarships**

### **Teaching Scholar, Oct '21**

*Imperial College London, London, United Kingdom.*

- Scholarship for Ph.D tuition fees.

### **MOBINT Scholarship, May '19**

*Generalitat de Catalunya - Agència de Gestió d'Ajuts Universitaris i de Recerca, Barcelona, Spain.*

- Scholarship for international mobility of students with academic recognition (MOBINT - MIF 2019).

### **CFIS Scholarship for International Mobility, Feb '19**

*Centre de Formació Interdisciplinària Superior (CFIS), Barcelona, Spain.*

- Excellence scholarship for the development of the Bachelor's Thesis at University of Toronto.

### **CFIS Scholarship for tuition and housing, Jun '15**

*Centre de Formació Interdisciplinària Superior (CFIS), Barcelona, Spain.*

- Scholarship for belonging to the CFIS double degree program which includes the tuition fees for the Bachelor's Degree in Engineering Physics and housing fees.

### **Spanish baccalaureate honours distinction, Jun '14**

*Institut Salvador Vilaseca, Reus, Spain.*

- Acknowledgement for academic grades which includes a scholarship for tuition fees of the first year of the Bachelor's studies.

## **Acknowledgements and awards**

### **Winning team in AI Hack 2022: Microfluidic challenge Feb '22**

*Imperial College London, London, United Kingdom.*

### **Winning team in Datathon CFIS UPC-Kernel Analytics, Nov '18**

*Universitat Politècnica de Catalunya and Kernel Analytics, Barcelona, Spain.*

### **Runner-up prize: Credit Suisse Challenge at LauzHack, Nov '17**

*École polytechnique fédérale de Lausanne (EPFL), Lausanne, Switzerland.*

### **Runner-up prize: CopenHacks, Apr '17**

*Microsoft Development Center, Copenhagen, Denmark.*

### **3rd place award: 2nd Hello Barcelona Bootcamp (Div. B), Feb '17**

*in collaboration with Moscow Workshops ACM-ICPC, Barcelona, Spain.*

## **Additional information**

### **Languages**

- Spanish: Native
- Catalan: Native
- English: Advanced (Certificate in Advanced English) C1
- German: Elementary A2

### **Programming courses**

- Udacity Google Developer Challenge Scholarship: Front-End Web Dev. (Nov '17)
- Introduction to machine learning/deep learning. 12 hours (Mar '17)
- Hello Barcelona Programming Bootcamp (in collaboration with ACM-ICPC Workshops). 50 hours (Feb '17)
- Introduction to 3D game design with Unity 5. 40 hours (Feb '16)

### **Programming capabilities**

- Data bases: Intermediate skills of SQL.
- Decent skills of C/C++, Java, Python, Javascript, R and Matlab.
- 3-year experience contributing to machine learning projects. Comfortable using common deep learning frameworks, e.g. Pytorch or Tensorflow.