

# Valentin Poirot

## IoT AND EMBEDDED ML RESEARCHER - DOCTORAL CANDIDATE

Kiel, Germany

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## Summary

Systems Researcher with 4+ years of experience in low-power wireless communication for IoT (Bluetooth Low Energy and Mesh, IEEE 802.15.4). I also design Machine Learning solutions for constrained platforms (Tensorflow Lite for Microcontrollers, CMSIS NN, Tiny ML). Proficient in C, Python, Tensorflow, and embedded operating systems (Zephyr RTOS, Contiki-NG).

Team-oriented, I led 10+ B.Sc/M.Sc theses and projects during my PhD. Erasmus Mundus alumnus, I studied and worked in four countries. Final year PhD Candidate, defense target is September 2022.

## Experience

### RESEARCHER, DOCTORAL CANDIDATE

2017 - Present

Kiel University & Chalmers University of Technology

Germany & Sweden

- Designed and implemented distributed protocols for low-power IoT (Bluetooth Low Energy, IEEE 802.15.4)
- Implemented efficient Machine Learning solutions for resource-limited platforms (TensorFlow Lite, CMSIS NN)
- Authored 4+ papers at international conferences: IEEE ICDCS, EWSN, IEEE/IFIP NOMS [[Scholar](#)]
- Oversaw 10+ M.Sc/B.Sc theses, student projects, that led to workshop publications
- Created M.Sc course labs in Distributed Systems, IoT and Wireless Networks, and Capture The Flag competitions

### RESEARCH INTERN, MASTER THESIS

Jan-Jun 2017

Ericsson Research

Sweden

- Introduced new algorithms for multi-connectivity in 5G networks
- Implemented 5G models for in-house simulations
- Published in Springer Wireless Networks [[pdf](#)]

## Education

### DOCTORATE OF ENGINEERING (ONGOING)

2017 - Present

Chalmers University of Technology

Germany & Sweden

- Title: "Coordination and Self-Adaptive Communication Primitives for Low-Power Wireless Networks"
- Supervisor: Prof. Olaf Landsiedel (University of Kiel, prev. Chalmers University of Technology)
- Licentiate Degree successfully defended in 2020 (Half-time PhD degree awarded in Sweden), [[pdf](#)]
- Key Courses: Machine Learning (ML), Reinforcement Learning (RL), Active Learning (AL), Advanced IoT Topics
- Leadership courses: Team Management and Leadership, Research Ethics and Sustainability, Teaching and Education

### ERASMUS MUNDUS MASTER PERCCOM

2015 - 2017

European Master in Computer Science

France & Finland & Sweden

- **Highly selective European master** (<10% acceptance rate)
- Joint European Masters in Pervasive Computing and COMmunications for a Sustainable Development (PERCCOM)
- Each semester takes place at a different university: University of Lorraine (France), LUT University (Finland), Luleå University of Technology (Sweden)
- Key Courses: Green Communications Engineering, Pervasive and Mobile Computing, Sustainability in Computer Science.

### B.SC. IN ENGINEERING

2012 - 2015

University of Lorraine

France

- **First of promotion, with honors** (Grade: 17.59/20)
- B.Sc. In Engineering with a focus on Computer Networking and Telecommunications
- Key courses: Computer Networks, Telecommunications, Engineering
- French name: Licence Sciences pour L'Ingénieur EEAPR
- First two years done as a University Technical Diploma (DUT Réseaux et Télécommunications)

## Projects & Publications

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### eAFH: Improved Frequency Hopping for Bluetooth Low Energy

Adaptive channel management for Bluetooth Low Energy and Zephyr OS  
Paper under submission

### Dimmer: RL-based Adaptive Wireless Communication

Embedded reinforcement learning and self-learned transmission policies to avoid interference in low-power IoT  
Published at IEEE ICDCS '21, [\[GitHub\]](#)

### Wireless Paxos: Low-power Wireless Consensus

Fault-tolerant, network-wide consensus protocol for low-power IoT  
Published at EWSN '19, Best paper runner-up, [\[GitHub\]](#), [\[Paper\]](#)

## Awards

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<b>Best Paper Runner-Up</b> , Intl. Conf. in Embedded Wireless Systems and Networks (EWSN),	<b>2019</b>
<b>Best Thesis Presentation</b> , 3 <sup>rd</sup> PERCCOM Summer School, Public Vote	<b>2017</b>
<b>Erasmus+ Scholarship</b> , Erasmus Mundus Master PERCCOM, highly selective (<10% acceptance)	<b>2015</b>
<b>First of promotion, with honours</b> , B.S. in Engineering, grade: 17.59/20	<b>2015</b>

## Skills

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<b>Programming</b>	Python, C
<b>Machine Learning</b>	TensorFlow, Tensorflow-Lite for Microcontrollers, CMSIS-NN
<b>Wireless &amp; IoT</b>	Bluetooth Low Energy & Mesh, IEEE 802.15.4
<b>Embedded OS</b>	Zephyr RTOS, Contiki-NG
<b>Languages</b>	French (native), English (fluent)