

Angelo Feraudo



Contact

Email:

aferaudo34@gmail.com

Website:

https://aferaudo.github.io/new_website/

Languages

Italian, English

Programming Languages

Java, C, Shell, Python, JavaScript, Prolog, SQL, Scala, Go, Ada, C#

Working Environments

Eclipse, IntelliJ, PyCharm, Visual Studio, Visio, NodeJS, Git, Virtual Machines, Docker, Arduino IDE, Vim, Latex

Security Tools

Kali linux, Parrot Linux, Burp Suite, Zen Map, DirBuster, Hydra, WireShark, Metasploit, Ettercap

Certificates

IELTS: overall band 7 (C1)
Italian Car License
EASA Drone License(A1-A3)

Hobbies

Learn about new technologies
Weekly runner
Video Editing
Guitar
Drone

Education

- 2017–2020 **MSc in Computer Engineering**
Alma mater studiorum University of Bologna
Thesis title: **Distributed Federated Learning in Manufacturer Usage Description (MUD) Deployment Environments**
Supervisor: Prof. **Paolo Bellavista**
Co-supervisor: Prof. **Jon Crowcroft** and Dr. **Poonam Yadav**
Final grade: **110/110 with honours**
Courses List: Operating Systems M, Operation Research, Foundations of Artificial Intelligence M, Software Systems Engineering M, Distributed Systems, Protocols and Architectures For Space Networks M, Innovation and Project Management M, Information Security M, Project work for Information Security M, Computational Models and Languages, Data mining, Intelligent system, Mobile systems
- 2013–2017 **Bachelor's Degree in Computer Engineering**
Alma Mater Studiorum University of Bologna
Thesis title: **Implementazione di Network Function Virtualization attraverso container Docker in una rete SDN**
Supervisor: Prof. **Marco Prandini**
Co-supervisor: Dr. **Andrea Melis**
Final grade: **103/110**
Exams of my choice: Laboratory of System Administration, Web Technologies

Working experience

- 2021
Apr-Today **Research scholarship: Federated and Reinforcement Learning for Industrial Environments**
University of Bologna (full-time)
- 2020
July-Sept **HORIZON INTERNSHIP - 05 (DADA): Traffic scheduling in home IoT networks using deep reinforcement learning**
University of Nottingham (full-time)
See "Towards Manufacturer Usage Description Extension" project in Projects section
- Apr-June **ACM-W UK Inspire 2020: Setting Research Support in Machine Learning for ACM-W UK funded Internship**
University of York (part-time)
A work in collaboration with Poonam Yadav, Siamak F. Shahandashti and Vassilios G Vassilakis from University of York, and Budi Arief from University of Kent. (see "Position paper: A systematicframework for categorising IoT device fingerprinting mechanisms" in Achievements section)

Teaching Activities

- Feb 2018-
July 2019 **Tutor for the course Computer Fundamentals T-1 (Java), in Management Engineering, University of Bologna**

Achievements

2020

- December **Qualified Italian computer engineer**
- October **Published a position paper in AIChallengeloT 2020 workshop "Position paper: A systematic framework for categorising IoT device fingerprinting mechanisms"** <https://dl.acm.org/doi/10.1145/3417313.3429384>
- April **Published a paper in EdgeSys 2020 workshop "CoLearn: Enabling Federated Learning in MUD-compliant IoT Edge Networks"** <https://dl.acm.org/doi/abs/10.1145/3378679.3394528>
- February **Conditional Offer of Admission Certificate: PhD University of Cambridge**

2019

- October **Published a poster in a top-tier Sensing conference "Enforcing accountability in Smart built-in IoT environment using MUD"**
- May **Received Scholarships to spend study and research periods abroad aimed at preparing the final dissertation for Computer Engineering Degree Programme of the DISI Department, Bologna Campus.**

Projects

- 7 months **Towards Manufacturer Usage Description Extension** July-Sept 2020/Oct 2020 - Jan 2021
Extension of MUD data model: packet-rate and byte-rate.
Extension of osMUD manager: supported linux firewall systems (ebpf and iptables).
Analysis of a huge dataset containing IoT generated data, in terms of bytes and packets per minute.
Supervisors: Dr. **Diana Andreea Popescu** and Prof. **Richard Mortier**
Co-supervisor: Dr. **Poonam Yadav**
- 6 months **Distributed Federated Learning in Manufacturer Usage Description (MUD) Deployment Environments(MSc Graduation Work)** September 2019 - February 2020 Cambridge
Based on two main topics: (1) Manufacturer Usage Description (MUD), a new way to reduce the IoT devices communications to those intended by the manufacturer; (2) Federated Learning, which is a distributed machine learning approach that preserves the privacy of the data
- 5 months **Project Work in Information security (part-time)** November 2018 - March 2019 Bologna
This work was focused on the analysis of Bluetooth Security in some IoT scenarios
- 2 months **Robot Cleaner** August - September 2018 Bologna
Project work of software systems engineering. The aim of this project was to design and develop a software system with related testing plans. At the end of the project we had a little prototype of the most famous Roomba robot, which was realised by using a Raspberry Pi 3 and other sensors
- 2 months **Mills Game Contest** April - May 2018 Bologna (part-time)
Project work of artificial intelligence. The goal was to realise a player of the Nine Men's Morris game