



# MATTEO FRANCIA

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## DESIRED OCCUPATION

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Placement in a position that allows for research in machine learning with a particular focus on data mining.

## EDUCATION

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### Master's degree

October, 2014 → March, 2017

*Computer Science and Engineering*

*University of Bologna, Italy*

- Studies in the field of software engineering, programming paradigms and languages.
- 110 *cum laude*/110

### Erasmus+

September, 2015 → July, 2016

*Naturwissenschaftliche Informatik*

*Universität Bielefeld, Bielefeld, Germany*

- Studies in the field of artificial intelligence, machine learning, neural networks and speech recognition.

### Bachelor's degree

September, 2011 → October, 2014

*Electronics, informatics and telecommunications engineering*

*University of Bologna, Italy*

- Studies in the field of networking, signal processing, software engineering and programming languages.
- 110 *cum laude*/110

### High-school diploma

2006 → 2011

*Informatica abacus*

*I.T.T.S. "Blaise Pascal", Cesena, Italy*

- 100 *cum laude*/100

## PUBLICATIONS

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### Submission to SASO 2017

*11th IEEE International Conference on Self-Adaptive and Self-Organizing Systems*

- Title: "Towards a Foundational API for Resilient Distributed Systems Design".
- Authors: Matteo Francia, Danilo Pianini, Jacob Beal, Mirko Viroli.

### Master's degree thesis

March 16, 2017

*A Foundational Library for Aggregate Programming*

*Relator: Prof. Mirko Viroli*

- Co-relators: Jacob Beal (University of Iowa), Danilo Pianini (University of Bologna)
- *Deployment of the Protelis-Lang library and Protelis-Test framework for the aggregate programming.* External site: <http://amslaurea.unibo.it/13090/>

### Bachelor's degree thesis

October 9, 2014

*Apprendimento Hebbiano in Robotica: Teoria e Applicazione*

*Relator: Prof. Andrea Roli*

- *After the study of Hebbian learning theory, a sequence of steps to build a robot capable to learn is presented exploiting DAC and Value System architectures.* External site: <http://amslaurea.unibo.it/7550/>

## LANGUAGE

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	Reading	Listening	Writing	Speaking
<b>Italian</b>	Mother tongue			
<b>English</b>	C1	C1	B2	B2
<b>German</b>	B1	B1	A2	A2

*Skills acquired during Erasmus+ in Bielefeld (DE), and research at University Of Iowa, IA (USA)*

IELTS, British Council, European level: C1

July, 2015

## EXPERIENCE

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### Research fellowship

May, 2017 → April, 2018

*Modeling social behaviors from trajectory data*

*DISI - University Of Bologna, Italy*

- User and group profiling based on location data, with a particular focus on big data architectures
- UniBO supervisor: Prof. Matteo Golfarelli

### Visiting researcher

October, 2016 → December, 2016

*Advancements in the aggregate programming field*

*University Of Iowa, Iowa City, IA, USA*

- Development of the fully-resilient **Protelis-Lang** library for aggregate computing
- UIowa supervisor: Dr. Jacob Beal, UniBO supervisor: Prof. Mirko Viroli

### Internship

October 1, 2013 → March 15, 2014

*Raspberry Pi and Linux Kernel*

*APIce lab, University of Bologna, Cesena, Italy*

- *Analysis of Raspberry Pi's I/O kernel modules to manage GPIOs and external devices on Linux. Project and implementation of Magic Boxes demo.*
- Supervisor: Prof. Alessandro Ricci
- External site: <https://apice.unibo.it/xwiki/bin/view/Tirocini/raspi14Francia>

### EffeSicurezza di Francia Luigi

June → August: 2008, 2007, 2006

*Apprentice*

*Cesena, Italy*

- Design and installation of security, TVCC and domotic automation systems

## OTHER

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### Open source contributions

- Protelis: development of the fully-resilient **Protelis-Lang** library for aggregate computing, bug fixes and further enhancements. External site: <https://github.com/Protelis/Protelis>
- Alchemist: enhancements of the Alchemist simulator and bug fixes. External site: <https://github.com/AlchemistSimulator/Alchemist>

### Exhibition

March 14 and 15, 2014

*Magic boxes*

*MAMbo - Museum Of Modern Art Bologna, Bologna, Italy*

- *We built “smart” boxes—with Raspberry Pis and Android tablets—capable of self-organization and coordination. Users can interact with them, creating different compositions and effects.*
- Supervisor: Prof. Alessandro Ricci
- External site: <http://www-db.disi.unibo.it/MAMbo/mambo/i6/en/>

## TECHNICAL STRENGTHS

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<b>Hardware configuration</b>	Server and Desktop systems assembling
<b>Computer Programming</b>	Object Oriented design, distributed systems, concurrent programming, mobile programming (Android)
<b>Software configuration</b>	Windows and Linux installation and configuration
<b>Programming Languages</b>	Java, Scala, C#, Haskell, Prolog, JavaScript, C, Python
<b>Protocols &amp; APIs</b>	TCP, UDP, HTTP, DNS, JSON, SOAP, REST
<b>Databases</b>	SQL, MySQL, PostGres, PostGis
<b>Development techniques</b>	Git; Build systems: Gradle, Maven; CI: drone.io and TravisCI
<b>Markup languages</b>	XML, HTML, Markdown
<b>Tools</b>	Vim

## ADDITIONAL INFORMATION

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**About me:** During both Bachelor's and Master's degrees, I have learned to manage small to medium-sized group projects. My permanences in Bielefeld and Iowa considerably improved my adaptation and independence skills, giving me the opportunities to integrate with multicultural communities.

**Field of interests:** programming languages and paradigms, MAS & coordination, artificial intelligence and machine learning, neural networks, open source.

**Signature,** May 13, 2017