EUGEN ROŽIĆ

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EDUCATION

MSc in Physics
Oct. 2012 - Sep. 2017

University of Zagreb, Faculty of Science
Integrated 5 year programme, research-oriented study of physics;
graduated magna cum laude with weighted grade average: 4.83/5.00 (300 ECTS),
thesis title: *On different thermodynamical pictures of ensembles of complex networks*,
supervisor: Vinko Zlatić, PhD (vinko.zlatic@irb.hr)

MSc in ICT
Oct. 2011 - Jul. 2013

University of Zagreb, Faculty of Electrical Engineering and Computing
Graduate 2 year programme, profile: Telecommunications and Informatics;
graduated magna cum laude with weighted grade average: 4.93/5.00 (122 ECTS),
thesis title: *A Dynamic and Elastic Publish-Subscribe Service for the Cloud Environment*,
supervisor: Professor Ivana Podnar Žarko, PhD (ivana.podnar@fer.hr)

BSc in Computing
Oct. 2008 - Jul. 2011

University of Zagreb, Faculty of Electrical Engineering and Computing
Undergraduate 3 year programme; module: Information Processing
graduated with weighted grade average: 4.92/5.00 (193 ECTS), thesis title: *Connecting diagnostic devices to smartphones with Android operating system using Bluetooth protocol*, supervisor: Professor Vedran Bilas, PhD (vedran.bilas@fer.hr);
two Faculty Council Special Recognitions "Josip Lončar", for top 1% performance in the first year and overall

Additional courses

Functional programming principles in Scala December 2012
An EPFL course on Coursera held by Professor Martin Odersky, PhD

Scholarships

City of Zagreb Scholarship 2010/11 - 2012/13 and **2014/15 - 2016/17**
Awarded to the best ~100 3rd or higher year students from Zagreb until the end of their Master programmes (50% of the average Zagreb salary paid monthly)

University of Zagreb Scholarship 2013/14
Awarded for exceptional academic achievement in the previous year

National Foundation for the Support of Pupil and Student Standard Scholarship 2009/10
Awarded for exceptional academic achievement in the previous year

PUBLICATIONS

M. Brbić, E. Rožić, I. Podnar Žarko

Recommendation of YouTube Videos; Proceedings of the 35th MIPRO International Convention, 2012

The paper presents a recommendation algorithm based on a ranking formula which utilizes data retrievable by the YouTube Data API. The algorithm was implemented in a Google App Engine application which was used to generate recommendation data that was analysed. The paper won the award for best student work.

E. Rožić, V. Zlatić — **The Edges-as-Particles Thermodynamical Picture Of Networks**; in preparation for submission

This paper is the result of my master thesis research. It shows how considering edges as analogs of particles leads to sensible results for the specific entropy and properties such as additivity and ensemble equivalence of statistical models of networks, while the usual view of vertices as particles does not.

WORK EXPERIENCE

Organizing Committee Member
Oct. 2013 - Aug. 2015

30th International Conference of Physics Students (ICPS 2015), Zagreb
Organised 7 days of food and accommodation for over 300 participants and 3 invited international speakers, arranged a venue for more than 90 lectures, managed 15 volunteers and coordinated the whole event.

Research Intern
Jul. 2012 - Sept. 2012

Digital Enterprise Research Institute, National University of Ireland, Galway
Worked with Mario Arias on implementing HDT RDF compression (*www.rdfhdt.org*) over hard-drive using noSQL databases (JDBM3, BerkeleyDB) in Java.

Student Teaching Assistant
Sept. 2009 - Jan. 2011

University of Zagreb, Faculty of Electrical Engineering and Computing
Marked students' homework and assisted with teaching on courses: Mathematics 1, Mathematics 2 and Mathematics 3-C.

INTERESTS

Research — Computer Science**: Optimization, Metaheuristics, Machine Learning**
Physics**: Quantum Foundations, Statistical Physics, Complex systems**

Personal — Philosophy, Education; Poker; Rock climbing; Drums, Piano; Tinkering

COMPUTER SKILLS

Programming — **Java, Python,** C/C++, Scala; HTML, CSS, PHP, JSP; bash, MatLAB

Platforms — **Linux** (Ubuntu)**, Android, Windows**

Environments — **Eclipse** (for Java, Python & LaTeX)

MISCELLANEOUS

Languages
Croatian · Native
English · Proficient (IELTS 8.5/9)
German · Elementary

Driving licence — **B category** (personal vehicles up to 3500 kg)

APPENDIX - NOTABLE PROJECTS

Keil MDK, Python

A Proton Precession Magnetometer

A 3 person project for the "Advanced Physics Lab 2" course whose aim was to construct a toroidal PPM from scratch. I assisted in making a custom electronic circuit on a PCB, programmed an STM32F072RB MCU on a Discovery board and made a driver program in Python to communicate with the MCU over USB.

Java

A Dynamic and Elastic Publish-Subscribe Service for the Cloud Environment

Project for the Master thesis. A highly parallel, multi-threaded, multi-process publish/subscribe over TCP/IP system designed for high load and written in Java (~10,000 LoC). It's code is the base of the CUPUS module of the OpenIoT project (*github.com/OpenIotOrg*).

Java, Android

Connecting Diagnostic Devices and Mobile Devices with Android Platform via Bluetooth

Project for the Bachelor thesis. A multi-threaded Android application for communication with and use of various personal medical devices, e.g. spirometers, over Bluetooth; part of a collaboration project with the industry.

Java

A System for Electronic Voting in Local Elections

Project for the "Software Design" course. A client/server system with communication over TCP/IP and voter and administrator roles, written in Java with MVC approach (~3500 LoC). The client has a nontrivial Swing GUI and the server uses an SQL database.

Java, OpenCV

Tracking moving objects with a movable camera

A 5 person project for an undergraduate course with me as project leader. We used OpenCV (Java wrapper) to recognize objects on images and follow them with a 360° network dome camera where FIR and Kalman filters were experimented with for movement prediction.

Java

A P2P application for backing-up data on a local network

A 4 person project for an undergraduate course. Written in Java (~5000 LoC) using MVC approach. Rich GUI interface, TCP & UDP P2P encrypted communication and database use with Hibernate.