

NATALIA MORDVANYUK

Programmer & Researcher in Artificial Intelligence

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EXPERIENCE

Senior Strong AI Engineer

Avatar Synthetic Cognition

March 2022 - Ongoing Barcelona, Spain

- Data analysis and forecasting applying Deep Learning (PyTorch) and comparing performance with the Synthetic Cognition algorithm
- Development of a new Synthetic Cognition API, embeddable with the scikit-learn API.

Business Applications Engineer

DXC Technology

January 2022 - March 2022 Girona, Spain

- Application of Natural Language Processing to automate the integration of the databases
- Data analysis for integration purposes (Oracle Data Integrator). Data context: bank insurance services.

Teaching & Research staff

University of Girona

August 2014 - October 2022 Girona, Spain

- Design & Development of an Android and Spring Applications (called NOAH) for premature babies health-care monitoring at home based on case-based reasoning, and integration with the Mirth of the Josep Trueta hospital. All technique tasks related with server configuration, development, databases, etc. NOAH has been a finalist in the mHealth category in the E-health summer university (Université d'été de la e-santé, Castres, França) and also in the II VHIR Health Innovation Competition.
- Creation and implementation in python of different new sequential and temporal pattern mining algorithms (verTIRP, TA4L, VEPRECO) that are fundamental in the data mining field with broad applications (i.e. market basket analysis, text analysis, sentiment analysis, programmer's code recommendation and bioinformatics).
- Teaching Artificial Intelligence, Advanced Artificial Intelligence Techniques, and Computer Structure and Technology to Degree in Computer Engineering, Degree in Biomedical Engineering, and Degree in Industrial Engineering.
- Let's Encrypt + certbot certificate renewal for the servers where we have Gitea and Owncloud platforms.

Android & Web Developer

IngeniumMobile

Mar 2011 - Jun 2013 Girona, Spain

- Design & Development of Android Applications.
- Design & Development of Web Application (using yii php framework) that was linked to the Android application. The Web and Android applications interacted by using GET and POST JSON requests.

Support to the IT Department

Comexi Group Industries

Jul 2011 - Dec 2011 Riudellots de la Selva, Girona

- Design & Development of Web Application for risk's analysis.

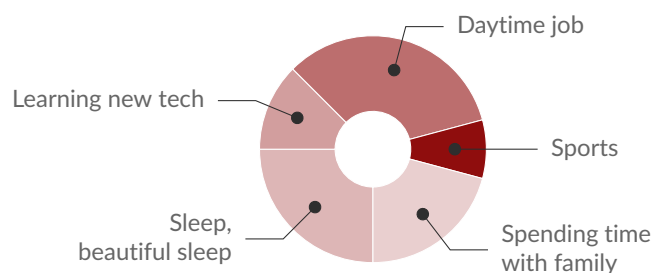
Web designer & programmer

La Mosca Gironina

Jun 2011 - Sep 2011 Riudellots de la Selva, Girona

- Design & Development of different Web Applications.

A DAY OF MY LIFE



MY LIFE PHILOSOPHY

"Believe and act as if it were impossible to fail."

STRENGTHS

Hard-working Self-motivated Creative

PROJECTS

PEPPER

funded by the European Commission & the Generalitat de Catalunya 2017 SGR 1551

3 years

- For the PEPPER (Patient Empowerment through Predictive PERSONALISED decision support) I developed a python application for prediction of glucose level conditions from sequential data.

MOSHCA

funded by the European Commission & the DG Research and Innovation

📅 3 years 6 months

- For the MOSHCA (My Mobile and Smart Health Care Assistant - IPT-2012-0943-300000) I developed an Android Application for premature babies healthcare monitoring at home. This application uses rules-based reasoning to predict the baby's status based on the data collected from the pulse oximeter connected via Bluetooth to the smartphone.

SCIENTIFIC PUBLICATIONS

📄 Last Journal Articles

- Mordvanyuk, N., Bifet, A., & López, B. (2022). Vepreco: Vertical databases with pre-pruning strategies and common candidate selection policies to fasten sequential pattern mining. *Expert Systems with Applications*, 204, 117517. doi:https://doi.org/10.1016/j.eswa.2022.117517
- Mordvanyuk, N., López, B., & Bifet, A. (2022). Ta4I: Efficient temporal abstraction of multivariate time series. *Knowledge-Based Systems*, 244, 108554. doi:https://doi.org/10.1016/j.knsys.2022.108554

👥 Last Conference Proceedings

- Mordvanyuk, N., Gauchola, J., & Lopez, B. (2021). Understanding affective behaviour from physiological signals: Feature learning versus pattern mining. In *2021 IEEE 34th international symposium on computer-based medical systems (CBMS)*. doi:10.1109/cbms52027.2021.00049
- Mordvanyuk, N., López, B., Reixach, M., Fabrellas, M., Planella, M., Cordon, C., ... The Médecins Sans Frontières (MSF) Days. (2019). Noah: Supporting premature babies care with mobile phones. doi:10.13140/RG.2.2.30306.99529

CURRENTLY WORKING WITH

Python Julia Gitlab

Pytorch Keras Pandas Scikit-learn Matplotlib

Scipy Numpy Seaborn

Weka MOA SPMF LaTeX

PREVIOUSLY WORKED WITH

Java HTML CSS PHP JavaScript

Android SpringMVC Yii PHP Framework

MySQL Apache Tomcat phpmyadmin

I ALSO WORKED WITH

Node.js Electron C C++ ShellSript

Visual Basic .Net C# Haskell Prolog JSP

Jquery

Grails Flask PyGame

Sql Server Oracle Criteria HQL SQLite

LANGUAGES

Spanish ● ● ● ● ●

Catalan ● ● ● ● ●

Russian ● ● ● ● ●

English ● ● ● ● ●

EDUCATION

Ph.D. in Technology

University of Girona

📅 Feb 2017 - Oct 2021

Thesis title: Efficient sequential and temporal pattern mining

M.Sc. in security of information and communication technologies

Universitat Oberta de Catalunya

📅 Oct 2014 - Aug 2016

B.Sc. in Computer Engineering

University of Girona

📅 Sept 2012 - Sep 2014

B.Sc. in Technical Engineering in Management Computing

University of Girona

📅 Sept 2008 - Sep 2012

INTERNSHIPS ABROAD

Pattern mining

Télécom ParisTech

📅 May 2019 – Sep 2019

COURSES & CERTIFICATES

Pattern Discovery in Data Mining

University of Illinois at Urbana-Champaign

📅 Mar 2017 – Mar 2017

Time series course

Summer School: Madrid Advanced Statistics and Data Mining

📅 Jun 2016 – Jul 2016

Supervised Pattern Recognition

Summer School: Madrid Advanced Statistics and Data Mining

📅 Jun 2016 – Jul 2016

Unsupervised Pattern Recognition

Summer School: Madrid Advanced Statistics and Data Mining

📅 Jun 2016 – Jul 2016

English certificate B2

University of Girona

📅 May 2016

Spanish certificate DELE C1

Instituto Cervantes

📅 Sep 2017