

Nestor Cabello

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EDUCATION

The University of Melbourne

Melbourne, Australia

Doctor of Philosophy in Computer Science

Dec 2017 – Dec 2022

Thesis: “[Scalable and Explainable Time Series Classification](#)”

Supervisors: [Prof Lars Kulik](#) and [Assoc Prof Jianzhong Qi](#)

The University of Melbourne

Melbourne, Australia

Master in Computer Science (with Distinction)

Feb 2015 – Nov 2016

Thesis: “[Automatic caloric expenditure estimation with smartphone’s built-in sensors](#)”

Supervisors: [Prof Lars Kulik](#) and [Dr Masud Moshtaghi](#)

Escuela Superior Politécnica del Litoral (ESPOL)

Guayaquil, Ecuador

Bachelor in Electronics and Telecommunications

Mar 2004 – Dec 2008

SKILLS

Programming Languages: Python, Java, C#, MATLAB, R

Web Technologies: PHP, JavaScript

Mobile Development: Android, React Native

Machine Learning Libraries: Scikit-Learn, PyTorch, Keras, TensorFlow, Sktime

Data Manipulation and Visualisation: NumPy, Pandas, Matplotlib, Seaborn

Databases: SQL, MySQL, PostgreSQL, SQLite, InfluxDB

Cloud Computing: AWS (Amazon EC2 and Amazon S3), Melbourne Research Cloud

High Performance Computing: Spartan

WORK EXPERIENCE

The University of Melbourne

Melbourne, Australia

AI Research Fellow | Reporting to [Prof Lars Kulik](#)

Jan 2023 – Present

- Researcher for workstream 3 of the [Music Attuned Technology - Care via eHealth \(MATCH\)](#) project.
- Development of machine learning models to automate the detection of agitation symptoms related to dementia.
- Built a data pipeline to extract and preprocess sensor-based physiological data from Empatica’s EmbracePlus medical wearable.
- Researched several noise reduction techniques and integrated [DeepFilterNet](#) models into our data pipeline to remove/reduce noise from the collected audio data.
- Developed an [Android/iOS app](#) for data collection of agitation symptoms in patients living with dementia.
- Supervised the development of the MATCH app, which integrates the Spotify API to provide music recommendations.
- Supervisor of 2 PhD students.
- Marker for Master of Information Technology theses during Semester 2, 2023 and Semester 1, 2024.
- Lecturer for Design of Algorithms (COMP20007) for Semester 1, 2024. Delivered lectures on String Matching, Dynamic Programming, Sorting Algorithms, Binary Search Trees, Hashing, and Data Compression.
- Participated in the hiring process for software engineering positions for the MATCH Project, which involved preparing take-home tasks and conducting interviews.
- Reviewer for Conference on Information and Knowledge Management (CIKM) 2024.
- Reviewer for Knowledge Discovery in Databases (KDD) 2025.
- Technical representative of the MATCH Safety Committee and MATCH Capacity Building Committee.

RMIT University

Melbourne, Australia

Academic Tutor (Casual)

Jul 2023 – Present

- Tutor, Lab Demonstrator, and Marker for Algorithms and Analysis (COSC2123/COSC1285)

- * Semester 1, 2025 | Reporting to [Dr Elham Naghizade](#).
- * Semester 2, 2024 | Reported to [Dr Elham Naghizade](#).
- * Semester 1, 2024 | Reported to [Assoc Prof Jeffrey Chan](#).
- * Semester 2, 2023 | Reported to [Assoc Prof Andy Song](#).

- Explain key algorithmic design paradigms: brute force, divide and conquer, decrease and conquer, transform and conquer, greedy, dynamic programming and iterative improvement.
- Explain key data structures: trees, lists, stacks, queues, hash tables and graph representations.
- Theoretically compare and analyse the time complexities of algorithms and data structures.

RMIT University

Melbourne, Australia

Research Assistant | Reported to [Dr Elham Naghizade](#)

Nov 2022 – Jan 2023

- Developed [scripts](#) for web scraping ABC's Fact Check website in order to identify news with a potential tweet/twitter-related content.
- Developed scripts to utilise the Twitter API for finding the source (i.e., original tweet) for each tweet extracted from "The Claim" section on ABC's Fact Check website.
- Developed scripts to utilise the Twitter API for generating cascades for particular tweets related to anti-feminist political discourse in Iran. Explored the ChatGPT API to automate the identification of sexism in tweets.
- Delivered a talk titled "ChatGPT as a scripting tool for researchers" for the CIDDA Human Information REtrieval (CHIRE) group at RMIT. I explained how to use ChatGPT for data preprocessing and data modelling purposes.

Rosetta Analytics

Melbourne, Australia

Senior Software Engineer | Reported to [Dr Anthony Quattrone](#)

Nov 2021 – Nov 2022

- Fulfilled the requirements of current and prospective clients.
- Provided support for the Regulatory Information Notice (RIN) clients.
- Implemented new features for RIN portals using PHP, JavaScript and MySQL.
- Developed and supported mapping portals using JavaScript, Google Maps and GIS technologies.
- Automated and optimised several processes for writing, reading, and updating databases.
- Managed Amazon EC2 servers.

RMIT University

Melbourne, Australia

Academic Mentor | Reported to [Prof Lawrence Cavedon](#)

Aug 2021 – Nov 2021

- Mentored machine learning projects for Masters students working with industry partners (Data Science Postgraduate Program).
- Provided technical advice and evaluated reports.

Universidad de Guayaquil/ESPOL

Guayaquil, Ecuador

Lecturer

May 2017 – Dec 2017

- Lectured in several courses: Operating Systems, Object-Oriented Software Engineering, Compilers, Data Structures, Databases, Fundamentals of Programming (Python) and Object-Oriented Programming (Java).
- Directed a community-focused project related to the development of computational thinking in children through the use of programmable technologies.

Carro Seguro S.A.

Guayaquil, Ecuador

Software Developer

Feb 2013 – Feb 2015

- Supported and developed new features for the company's web platforms using ASP.NET and SQL technologies.
- Developed [Android applications](#) with REST and SOAP web services.
- Implemented an HTTP Servlet for image transfer.
- Configured Linux servers.

Carro Seguro S.A.

Guayaquil, Ecuador

Technical Support Engineer

Jun 2009 – Feb 2013

- Supervised the correct operation of 130 monitoring towers all over the country.
- Tested, configured, and installed GPRS equipment.
- Repaired Motorola radios and provided maintenance.
- Configured VHF and UHF radios.

PUBLICATIONS

“Fast and Accurate Time Series Classification Through Supervised Interval Search”: Presented in the 2020 IEEE International Conference on Data Mining (ICDM, acceptance rate: 9.8%), pages 948-953.

“Fast, Accurate and Explainable Time Series Classification Through Randomization”: Published in Data Mining and Knowledge Discovery (DMKD, Q1 journal), Volume 38, pages 748–811, (2024).

PROJECTS

FitnessMate

- Fitness-tracking mobile application able to detect automatically 5 types of activities (i.e., Human Activity Recognition HAR): walking, jogging, cycling and walking upstairs/downstairs providing the calories consumed on each exercise. **Technologies:** Android, AndroidLibSVM, SQLite.

Mutual Exclusion Tetris

- Multiplayer adaptation of Tetris game by using Mutual Exclusion algorithms and a Peer to Peer (P2P) network. **Technologies:** Android, Node.js.

Instagram App

- Instagram-like Android application with some new functionalities that use the Instagram API and Bluetooth technology. **Technologies:** Android, Instagram API.