Najwa Laabid

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EDUCATION

University of Eastern Finland (UEF), Joensuu, Finland
International Master's Programme in Information Technology with a focus on data science and a minor in statistics, September 2019 - July 2021
GPA: 5.0/5.0

Beloit College, Beloit WI, USA
Exchange semester, focus on cognitive science and robotics, Jan. 2016 - May 2016

Al Akhawayn University in Ifrane, Ifrane, Morocco
Bachelor's degree in computer science, with a minor in business administration, September 2015 - June 2019
GPA: 3.88/4.00

EXPERIENCE

Junior Researcher   University of Eastern Finland
September 2021 - Present   Kuopio, Finland
Working in Dr. Merja Heinäniemi's lab (systems genomics) on machine learning applied to genomics. **Tools**: Python3, AWS (EC2/S3).

ASCI Programme - Intern   Aalto University
June 2021 - August 2021   Espoo, Finland
Worked in Dr. Arno Solin's group under the supervision of Dr. Will Wilkinson on developing inference algorithms for nonstationary Markov Gaussian processes. **Tools**: Python3, AWS (EC2/S3).

Thesis Placement - Data Analytics   Ericsson Inc.
June 2020 - May 2021   Kirkkonummi, Finland
Master's thesis on botnet command&control detection in IoT Networks using network flow data and a random forest model. **Tools**: Python3, AWS (EC2/S3).

Research Assistant   UEF
March 2020 - May 2020   Joensuu, Finland
Research assistant to Dr. Ville Hautamäki and Dr. Merja Heinäniemi. Projects focus on inference tasks on RNA and DNA single-cell sequencing data. **Tools**: Python3, Anndata, Scanpy, Matplotlib

Facebook Front-End Engineering Intern   Facebook Inc.
June 2020 - September 2020   London, United Kingdom
Internship offer accepted. Canceled due to the COVID-19. Replaced with Facebook's ABCS virtual summer program, completed successfully. **Tools**: Python3, problem solving, basic algorithms.

Google Software Engineering Intern   Google Inc.
July 2019 - September 2019   Munich, Germany
Implemented a system for suggesting camera-presets based on event type/characteristics for DIY event spaces. **Tools**: Javascript, HTML, CSS.

Project Coordinator and Developer   CLE in AUI
January 2019 - May 2019   Ifrane, Morocco
In charge of coordination, product design, and front-end development. Lead to the development of `https://kudos.aui.ma/`. **Tools**: React, Node JS, HTML5, CSS.

Software Engineering Intern   Sankhya Jiva Tecnologia e Inovação LTDA
July 2018 - December 2018   Uberlândia - MG, Brazil
Developed the conversational interface of Sankhya's intelligent assistant BIA. **Tools**:

Java, Junit, Kotlin.

Full-Stack Developer ASC Brazil
January 2018 - June 2018 Uberlândia - MG, Brazil
Developed and maintained code for SAC, a CRM/ERP platform run by ASC. Worked on integrating social network features to the ERP platform. **Tools**: PHP/MySQL, NodeJS/MongoDB, HTML/CSS.

Teacher Assistant/Statistical Analyst CLE @ AUI
September 2017 - December 2017 Ifrane, Morocco
Assisted with assignment grading in an entrepreneurship class. Ran statistical analysis on the program evaluation surveys for the Leadership Development Institute @ AUI. **Tools**: Excel.

Teacher Assistant CLE @ AUI
January 2017 - May 2017 Ifrane, Morocco
Assisted with the preparation of course material (mostly assignments and reading follow-ups) for advanced French literature class, *L'Algérie de qui?*. Single-handedly prepared and delivered the last class lecture.

Full-Stack Developer CLE @ AUI
September 2016 - December 2016 Ifrane, Morocco
Gathered and analyzed software requirements of the tutoring center, CLE. Created Private Tutoring Manager (PTM). An open-source version of the project is available at: `https://github.com/NajwaLaabid/Private-Tutoring-Manager--Web-App`. **Tools**: PHP, MySQL, HTML, CSS.

CRLA Accredited Tutor for Data Structures CLE @ AUI
January 2016 - December 2016 Ifrane, Morocco
Prepared practice problems and mock exams for Sophomore students in Data Structures. Conducted individual and group (approx. 20 students) tutoring sessions.

Mentor for Engineering Students SSE @ AUI
January 2016 - December 2016 Ifrane, Morocco
Conducted one-on-one meetings with 14 'mentees' (engineering freshman student) throughout the semester. Offered assistance with administrative, academic and (when appropriate) personal issues.

PROJECTS

Denoising scRNA-seq data using Bayesian Inference,
⌾ `https://github.com/NajwaLaabid/Denoising-sc-RNA-seq`
Identifying and imputing dropout (i.e, false 0 counts) in scRNA-seq data by fitting a Zero-inflated Negative Binomial noise model using deep auto-encoders. **Tools**: Python3, Tensorflow, Scikit-Learn.

Bayesian Inference - Simple Implementations,
⌾ `https://github.com/NajwaLaabid/bayesian-implementations`
A repository containing handy implementations of Bayesian Inference tools/concepts in Python 3. Currently contains: Gibbs sampler, GMM Generative Process, proof of CLT, and a classifier in JAX. **Tools**: Python3, Tensorflow Probability, JAX.

Gaussian Processes Applied to Botnet Detection,
⌾ `https://github.com/NajwaLaabid/GPS-on-botnet`
Exploring GP inference methods on detecting C&C botnet communication in network flow data. **Tools**: Python3, JAX.

Adversarial Resistance in Toxic Comments Detection,
⌾ `https://github.com/NajwaLaabid/Adversarial-Toxic`

Improving the adversarial resistance in toxic comments' detection with deep learning models through augmented training sets. **Tools**: Python3, PyTorch, Scikit-Learn.

Evaluating Frequent Itemset Mining Algorithms
 https://github.com/NajwaLaabid/Frequent-Itemset-Mining
Evaluating the effect of data sparsity, size, and diversity on eclat and fp-growth algorithms. **Tools**: Python3, Pandas, Numpy, Matplotlib.

RNA velocity through dynamical modeling
 https://github.com/NajwaLaabid/Frequent-Itemset-Mining
Inferring cell differentiation trajectories by modeling the change in spliced and unspliced mRNA counts (known as mRNA velocity) using expectation maximization. **Tools**: Python3, Pandas, Numpy, Matplotlib.

Intelligent Tutoring System for Early Algebra
 https://github.com/NajwaLaabid/Intelligent-Tutor-for-Early-Algebra-in-Arabic
ITS proposed 3 modules for introducing 1st degree equations in Arabic with customized real-time feedback. **Technologies**: multi-disciplinary research, functional programming, and knowledge engineering.

Temporal Tagger
 https://github.com/NajwaLaabid/TemporalTagger
Java library for extracting and parsing time expressions from natural language text in Brazilian Portuguese. **Technologies**: Java, JUnit.

Staffing Plan App for Jacobs Engineering (JESA) Group Inc.
 https://github.com/NajwaLaabid/Staffing-App
Web-app managing resource allocation and projects' development for JESA Morocco. **Technologies**: DJango, Javascript/JQuery, HTML5/CSS (Material Design).

Ant-Robot using Java
 https://github.com/NajwaLaabid/Ant-Robot
Modeled the foraging behavior of Cataglyphis ants using Lego Mindstorms EV3 Robots. **Tools**: Java/Lejos Plugin, LEGO Mindstorms Educational Kit.

AWARDS	**UEF's IMPIT Scholarship**, 2019, *100% tuition and living expenses stipend.* **Women Techmakers Scholar**, 2018, *by Google Inc. and Women Techmakers.* **Girls Code Too**, 2016, *second place, competitive programming contest*, Morocco. **Code It** *competitive programming contest*, Morocco, 2016 **NASA Space App Challenge**, 2016, *first place, local programming competition*, Morocco. **Al Akhawayn University Excellence Scholarship**, 2015, *100% tuition and common fees.*
LANGUAGES	**Arabic**, native. **French**, professional proficiency. **English**, professional proficiency. **Portuguese**, intermediate. **Finnish**, beginner.