Elena Flondor

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Education

Ph.D. Degree   **West University of Timisoara**
Doctoral School of Computer Science   *Oct. 2021-Present*
Department of Computer Science

Bachelor Degree: Finance and Banking   **West University of Timisoara**
Faculty of Economics and Business Administration   *Oct. 2020-Jul. 2023*
Department of Finance

Masters Degree: Big Data - Data Science, Analysis and Tech. **West University of Timisoara**
Faculty of Mathematics and Computer Science   *Oct. 2019-Jul. 2021*
Department of Computer Science

Bachelor Degree: Computer Science   **West University of Timisoara**
Faculty of Mathematics and Computer Science   *Oct. 2016-Jul. 2019*
Department of Computer Science

Professional Experience

Institute e-Austria   **Timisoara, Romania**
Research Assistant   *Jan. 2022-Jan. 2024*

Working on a project involving advanced computational statistics for planning and tracking production environments.
- Leveraged **Python** for advanced **data analysis and pattern detection** in production environments, supporting proactive insights and issue resolution.

West University of Timisoara   **Timisoara, Romania**
Teaching Assistant   *Oct. 2019-Present*

- **Laboratory activity**: Programming I (Python) and Programming II (C\C++)
- **Seminary activity**: Algorithms and Data Structures

Bitdefender   **Timisoara, Romania**
Security Researcher   *Jun. 2018-Present*

Conducted extensive research in **Android malware analysis**, developing solutions to **detect** and mitigate malicious or suspicious behaviors in Android applications.
- Completed **Capture the Flag (CTF)** challenges and **Android reverse engineering** tasks as part of specialized training, strengthening skills in application analysis and exploitation.
- Build a **webscraper** for markets for Android applications.
- Performed **static and dynamic analysis** of **Android malware** applications.
- Solving **reverse engineering problems**.
- Applying **Machine Learning** algorithms in order to find proper cyber-security solutions to protect Android devices.

- Solving **classification problems** implying detection of different types of malicious Android applications.
- **Integrated models in detection engines** and deployed multiple security cloud services.
- Developed **specialized skills** by working in different team projects.
- Work efficiently with internal tools and various frameworks, libraries and technologies, such as: **ApkTool**, **Jadx**, **Frida**, **Android Studio**, **Tensorflow**, **Keras**, **Scikit-Learn**, **Docker**, **ElasticSearch**, **Kibana**, **RabbitMQ**.
- Used mobile technologies to **develop Android applications**.
- Actively contributed to the development, monitoring, and maintenance of **EDR solutions for Android devices**, focused on uncovering and analyzing application behavior on end-user devices.
- Used various programming languages to develop projects, such as: **Python**, **Java**, **JavaScript**.

Continental Automotive Romania S.R.L.   **Timisoara, Romania**
Software Developer Intern   *Jun.-Sept. 2017*
Improve knowledge and programming skills in **C programming language** during the development of a project involving the improvement of a head-up display.

Publications & Communications

Flondor, E (2024). *Automated Classification of Android Games using Word Embeddings*, In: Joint IAPR International Workshops on Statistical Techniques in Pattern Recognition and Structural and Syntactic Pattern Recognition, S+SSPR 2024, Venice, Italy, September 9-10, 2024. Proceedings. Lecture notes in computer science.

Flondor, E., Donath, L., & Neamtu, M. (2024). *Automatic Card Fraud Detection Based on Decision Tree Algorithm*. Applied Artificial Intelligence, 38(1), 2385249.
Online: https://www.tandfonline.com/doi/pdf/10.1080/08839514.2024.2385249

Flondor, E. (2023, December). *Exploring AndroidManifest. xml for Automated Android Apps Classification*. In 2023 IEEE International Conference on Big Data (BigData) (pp. 6145-6147). IEEE Computer Society.

Flondor, E and Frincu, M ORCID logo, 2023. *Fine-grained categorization of mobile applications through semantic similarity techniques for apps classification.* In: Similarity Search and Applications: 16th International Conference, SISAP 2023, A Coruña, Spain, October 9–11, 2023. Proceedings. Lecture notes in computer science . Cham: Springer.
Conference presentation: https://www.sisap.org/2023/posters/3368.pdf

Flondor, E and Frincu, M, 2023. *Analysing android apps classification and categories validation by using latent Dirichlet allocation.* In: Nguyen, NT, Botzheim, J, Gulyás, L, Núñez, M, Treur, J, Vossen, G and Kozierkiewicz, A, eds., Computational Collective Intelligence: 15th International Conference, ICCCI 2023, Budapest, Hungary, September 27–29, 2023: Proceedings. Lecture notes in computer science . Cham: Springer, pp. 282-297. ISBN 9783031414558

Using Latent Dirichlet Allocation for Classification of Android Applications,
Scientific Seminar, Timisoara Romania, 8 March 2023.

Presentations

One-versus-One: Three Machine Learning Algorithms for Automated Android Applications Classification,
AIDays, Oradea, Romania, 12-13 October 2022.

Improving the Gender-Bias in AI-based Employment Matching Process – Research Project Proposal,
1st International EUGAIN Summer Training School, Lugano Switzerland, 6-8 June 2022.

Stacked Machine Learning Models for Automated Android Applications Classification,
CS3: Computer Science Students Symposium, Timisoara Romania, 28 June 2021.

Extracurricular Educational Activities

DATASUN Scientific School: Data Science for Solar Energy   **University of Savoy Mont Blanc**
Nov. 2022

Learned how to deal with data, its usage, analysis and handing for solar energy related studies.
Particular focus on the methods used to deal with data: clustering, bayesian approaches, machine
learning, data mining, neural networks, statistical learning, principal component analysis, uncertainty
analysis etc.

1st International EUGAIN Summer Training School   **Università della Svizzera italiana**
Jun. 2022

Acquired knowledge, skills, and competencies needed to design gender and gender-sensitive studies
in Informatics. Designed a user study in focus research area that accounts for gender issues, exchanged
and shares ideas in groups.

Reverse Engineering Laboratories   **Bitdefender**
Mar.-Jun. 2018

Understanding the way software systems work and how they could be taken over by malicious
actors; Developing an analytic mindset; Understanding concepts regarding Security, Personal data,
Vulnerabilities and Cyber-threats

Processors Architecture and Computer Vision Laboratories   **Intel**
Mar.-Jun. 2018

Learned about processors architecture, how it helps and how it can be improved for Computer Vision
related tasks.

SAP - ABAP Laboratories   **.MSG**
Nov.-Dec. 2017

Learned basics of SAP ABAP programming language.

Code: Analysis, Bugs and Security Lectures   **Politehnica University Timisoara**
Oct.-Dec. 2017

Learned how to better analyse code to discover bugs and security issues.

UVLabs   **Continental Automotive Romania**
Apr.-Jun. 2017

Learned about basics of specific products of Continental Automotive Romania and how to work with
them.

Networking Laboratories   **Microsoft Academy**

Learned about basic concepts of networking.

Awards

- Student Eminent 2018   *Dec. 2018*

Spoken Languages

- Romanian - native language
- English - writing (fluent), reading (fluent), understanding (fluent), speaking (fluent)
- French - writing (beginner), reading (beginner), understanding (beginner), speaking (beginner)

Other

Student Tutor   **West University of Timisoara**
Oct. 2017-Jun. 2019
Volunteer   **Students Organization of the West University of Timisoara**
Oct. 2016-Jun. 2019
Student Counselor   **West University of Timisoara**
Oct. 2016-Jun. 2018