

### Vlad-Andrei Negru

### Contact

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### Education

#### PHD IN COMPUTER SCIENCE

Technical University of Cluj-Napoca 10/2023 - present

#### MASTER DEGREE IN SOFTWARE ENGINEERING

Technical University of Cluj-Napoca 10/2021 – 07/2023 Grade Average: 9.74, Master Thesis: 10

## BACHELOR DEGREE IN SOFTWARE ENGINEERING

Technical University of Cluj-Napoca 10/2017 – 07/2021 Grade average: 9.84 License Thesis: 10

#### VALEDICTORIAN GRADUATE

Theoretical Highschool "Aurel Vlaicu" 09/2013 – 05/2017 Orastie, Romania

### About Me

Currently PhD student in Computer Science. Motivated, hardworking and always ready for a new challenge. Easy learner and coding enthusiast.

### **Work Experience**

04/2023 – 12/2023 Cluj-Napoca, Romania

#### SOFTWARE TECHNICIAN, Technical University of

#### Cluj-Napoca

Hired for an NLP project considering sentiment analysis in a call center environment, on Romanian language. My contributions include:

- Analyzing the language transfer capabilities of language models (XLM-R)
- Analyzing the task transfer capabilities of language models for sentiment analysis
  Analyzing the enhancements brought by employing artificially generated
- Analyzing the enhancements brought by employing artificially generated
  datasets in our solutions development

#### 02/2022 – CURRENT Cluj-Napoca, Romania

#### GRADUATE SOFTWARE ENGINEER, Technical University of Cluj-Napoca

Hired for a Machine Learning / NLP project, being in touch with:

- Transformer based language models: BERT, XLM-RoBERTa, Longformer
- Deep learning algorithms, developed using Pytorch
- Model serving using TorchServe
- AWS Deployment: SageMaker, ECR, S3, API Gateway

### 09/2021 - CURRENT

#### Cluj-Napoca, Romania

#### LAB ASSISTANT, Technical University of Cluj-Napoca

Teaching Fundamental Algorithms Laboratory, Logic Programming Laboratory, and Data Structures and Algorithms Laboratory

#### 10/2021 - 02/2022

Cluj-Napoca, Romania

#### JUNIOR SOFTWARE ENGINEER, TakeOffLabs

- Worked on a mobile application project using **React Native** and **Expo** framework, having multiple complex
- features like: QR Scanning, Intercom, Form submissions, API Calls
- The application API was made using **Ruby on Rails**
- Also had experience with styling frameworks like Tailwind and Bootstrap

#### • 07/2020 - 10/2020

Cluj-Napoca, Romania

#### SOFTWARE ENGINEER INTERN, ComplyAdvantage

- Worked on a web scraping pipeline using **Scala** and **Flink**.
- Had experience with Apache Kafka, Docker, Git, Kibana, Grafana.

### Projects

#### • 02/2023 - 07/2024

#### Joint Learning and Domain Adaptation in a Multilingual, Multitask Learning Context

- Master Thesis Project
- Development and Analysis of multiple **NLP techniques** for online recipe classification and extraction
- Employment of **encoder based language models** for classification (XLM-R, Longformer and BERT) and **sequence to-sequence language models** (T5) for text generation
- Domain adaptation using Masked Language Modeling
- Prompt Engineering for hallucination reduction
- 04/2020 07/2021

#### **Community detection for Spike Sorting**

- License Thesis Project
- Based on the **neuroscience** problem of **Spike Sorting** (grouping a series of signals to their firing neuron).
- Design, implementation, validation and interpretation of an innovative **cluster merging** algorithm using **community detection** and integration with **K-Means** in a clustering algorithm.
- Design, implementation, validation and interpretation of a **correlation-based dimensionality reduction** method that uses **community detection** in order to limit the correlation values in the final feature set.

#### 10/2020 - 01/2021

#### Disparity map generation and scene obstacles and road detection

- Designed and implemented an algorithm that generates the **disparity map** using two images taken from different viewpoints. Designed and implemented an algorithm that detects the
- obstacles and the road in a scene, using the disparity map previously computed. The method uses **U-disparity and V-disparity maps.**

#### 10/2020 - 01/2021

#### Home assistant dialogue manager

- Dialogue manager of a home assistant system implemented in Prolog.
- Resolves various user requests represented by an intent and a series of entities.

#### Awards

# **Bronze Medal at the National Olympiad of Informatics (2014)** – Romanian Ministry of Education

**First Place at the National Contest Acadnet - Networking Section (2016)** – Romanian Ministry of Education

### **Publications**

- Negru VA., Lemnaru C., Potolea R. (2023). Multitask, Cross-Lingual Recipe Classification Using Joint Fine-Tuning Mechanisms. In: Delir Haghighi, P., et al. Information Integration and Web Intelligence. iiWAS 2023. Lecture Notes in Computer Science, vol 14416. Springer, Cham. https://doi.org/10.1007/978-3-031-48316-5\_48.
- 2.**V.A. Negru,** R. Vacareanu, C. Lemnaru, M. Surdeanu, R. Potolea, "From Text to Taste: Advancing Smart Appliances with Multilingual Recipe Interpretation", 2024 IEEE 40th International Conference on Data Engineering Workshops (ICDEW). - to be published

3. R. Vacareanu, **V.A. Negru**, V. Suciu, & M. Surdeanu. (2024). From Words to Numbers: Your Large Language Model Is Secretly A Capable Regressor When Given In-Context Examples.

4. N. Veres., **V.A. Negru**, S.A. Toma, C. Lemnaru, & R. Potolea (2024). Overcoming Language Barriers in Classification through Translation-Augmented Data. In 2024 IEEE 20th International Conference on Intelligent Computer Communication and Processing (ICCP) (pp. 01-07).

5. MIGEA, A.M., **NEGRU, V.A.**, TOMA, S.A., LEMNARU, C., & POTOLEA, R. (2024). Cook Smarter Not Harder: Enhancing Learning Capacity in Smart Ovens with Supplementary Data. In 2024 IEEE 20th International Conference on Intelligent Computer Communication and Processing (ICCP) (pp. 1-8).

6. Sebastian-Antonio Toma, Camelia Lemnaru, **Vlad-Andrei Negru**, & Rodica Potolea (2024). Asking the Right Questions: Exploiting Hidden Interactions in a Generative Framework for Multilingual, Multitask Classification. In International Conference on Natural Language and Speech Processing.

7. **Vlad-Andrei Negru,** Vasile Suciu, Alex-Mihai Lăpuşan, Camelia Lemnaru, Mihaela Dînşoreanu, & Rodica Potolea (2025). Assessing language models' task and language transfer capabilities for sentiment analysis in dialog data. Computer Speech & Language, 89, 101704.

8. **Vlad Andrei Negru**, Robert Vacareanu, Camelia Lemnaru, Mihai Surdeanu, & Rodica Potolea. (2025). MorphNLI: A Stepwise Approach to Natural Language Inference Using Text Morphing. - Accepted to Findings in NAACL 2025