Nikitas Theodoropoulos

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EDUCATION

National Technical University of Athens (NTUA) *Sep 2015 - Nov 2024*
BSc & MSc in Electrical and Computer Engineering (5-year joint degree; 300 ECTS) Athens, Greece
◦ GPA: 8.83/10

◦ Final thesis project: Leveraging Synthetic Story Data for Sample-Efficient Language Pre-training.

PUBLICATIONS

1. Jaap Jumulet, ..., <u>Nikitas Theodoropoulos</u>, ..., Leshem Choshen (26 authors, listed alphabetically), **BabyBabelLM: A Multilingual Benchmark of Developmentally Plausible Training Data**, 2025, Under Review.

2. <u>Nikitas Theodoropoulos</u>, Giorgos Filandrianos, Vassilis Lyberatos, Maria Lymperaiou, and Giorgos Stamou **BERTtime Stories: Investigating The Role of Synthetic Story Data in Language Pre-training**. *The 2nd BabyLM Challenge at CoNNL*. 2024. ACL ↗

3. Adish Singla and <u>Nikitas Theodoropoulos</u>. **From {Solution Synthesis} to {Student Attempt} Synthesis for Block-Based Visual Programming Tasks**. *Conference on Educational Data Mining (EDM)*. 2022. Arxiv ↗

EXPERIENCE

Undergraduate Researcher at AILS of NTUA *Mar 2024 - Nov 2024*
Artificial Intelligence and Learning Systems Laboratory (AILS) at NTUA ↗ Athens, Greece
◦ Investigated efficient language modeling with human-like data constraints of at most 100 million words supervised by Prof. <u>Georgios Stamou</u>. Our work was accepted at the 2nd BabyLM Challenge at CoNNL 2024.

◦ Trained GPT-style models on sort stories and generated synthetic data for augmentation during model training.

Research Engineer at the department of Informatics at NKUA *Sep 2023 - Apr 2024*
Software Centric & Autonomic Networking (SCAN) at the National Kapodistrian University of Athens (NKUA) ↗ Athens, Greece
◦ Investigated multi-agent reinforcement learning methods for minimizing carbon emissions and optimizing energy usage in next-generation computer networks.

◦ Participated in writing industry and EU-funded research proposals.

Visiting Scholar - Fellowship at MPI-SWS *Feb 2021 - Jul 2022*
Machine Teaching group at MPI-SWS ↗ Saarbrücken, Germany
◦ Researched topics in AI for programming education, program synthesis and reinforcement learning, advised by Prof. <u>Adish Singla</u>. Presented our work at the 15th Conference on Educational Data Mining (EDM), 2022.

◦ Designed a benchmark for predicting (synthesizing) a student's attempt at a block-based visual programming task, given the student's previous attempt at a known reference task. Developed a neural synthesizer and a symbolic context-free grammar as competitive baselines, and evaluated human performance.

Undergraduate Researcher at SLP of NTUA *Feb 2020 - Feb 2021*
Speech and Language Processing group (SLP) at NTUA ↗ Athens, Greece
◦ Researched methods for learning brain-derived (fMRI) word representations and applying them in unsupervised discovery of a bilingual dictionary, advised by Prof. <u>Alexandros Potamianos</u>.

◦ Attended weekly lab meetings, regularly conducted and presented reviews of relevant literature.

Pre-doctoral Research School *Aug 3-9, 2020*
The Cornell, Maryland, Max Planck Pre-doctoral Research School (CMMRS) ↗ Saarbrücken, Germany (virtually)
◦ Selected for a one-week summer school organized by Cornell University, the University of Maryland, and the Max Planck Institutes, to learn about state-of-the-art research in computer science and prepare for graduate school.

Teaching Assistant at NTUA *Nov 2017 - Mar 2019*
School of Electrical & Computer Engineering at NTUA ↗ Athens, Greece
◦ Assisted in the national team preparation for the Balkan Olympiad of Informatics.

◦ Assisted students during lab sessions of university courses "Intro to Programming" and "Programming Techniques".

ACHIEVEMENTS

IEEEXtreme 14.0 coding contest, 2nd place in Greece, 76th worldwide, competition out of ~3700 teams. *2021*
IEEEXtreme 13.0 coding contest, 2nd place in Greece, 148th worldwide, competition out of ~3200 teams. *2020*
Award by EFG Eurobank, distinction in the Greek Nationwide University Entrance Examination *2015*

SKILLS

Technical skills: Python, PyTorch, Scikit-Learn, NumPy, Pandas, Matplotlib, C, C++, Rust, LaTeX, Unix/Linux, Bash, Tensorflow, Django, JS, Haskell, SQL, MatLab, Assembly, basic server/system administrator skills.

Languages: Greek (native), English (fluent, C2), French (conversational), German (basic).