

Alireza Soltani nezhad

PhD Student in Sustainable ICT

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👤 PROFILE

I am a PhD candidate in Sustainable ICT at Radboud University with a joint Master's degree in Computer Science from the University of Amsterdam and Vrije Universiteit Amsterdam. My academic and research interests focus on utilizing technology for sustainability, emphasizing data-driven solutions to enhance decision-making processes. Skilled in Python and R, I bring advanced proficiency in big data analytics and computational methods. My commitment extends beyond technical expertise to include a passion for education and scholarly contribution. I actively seek opportunities to engage in teaching and to author impactful academic publications in the field of sustainable technology.

🎓 EDUCATION

PhD Student in Sustainable Information and Communications Technology, Radboud Universiteit (RU) & The Netherlands Organization for Applied Scientific Research (TNO) 🔗	May 2024 – present Nijmegen, The Netherlands
MSc. Computer Science (Major in Software Engineering and Green Information Technology), Universiteit van Amsterdam (UvA) & Vrije Universiteit Amsterdam (VU) 🔗 GPA: 7.6/10	Sep 2021 – Jul 2023 Amsterdam, The Netherlands
BSc. Computer Engineering (Major in Software); Full scholarship Student; Honors Student, Imam Khomeini International University (IKIU) 🔗 GPA: 17.20/20	Sep 2015 – Sep 2019 Qazvin, Iran

📄 CO-AUTHORED PUBLICATIONS

On the Energy Consumption and Performance of WebAssembly Binaries across Programming Languages and Runtimes in IoT, EASE 2023 Publication Chairs, Finland 🔗 The paper explores WebAssembly binaries' energy and performance in IoT, comparing four languages on Raspberry. Its insights guide developers in optimizing IoT applications for efficiency.	Jun 2023
Combined Approach to Diagnose ADHD: Gamifying Conners Rating Scale, Interactive Mobile Communication, Technologies and Learning, Germany 🔗 Developed an innovative diagnostic tool for mental disorders, integrating gamification with the Conners Rating Scale and AI/ML analytics for enhanced child engagement and accurate early detection.	Sep 2020
An approach to diagnose cognitive deficits: gamifying ADHD children diagnosis questionnaire, CHI ACM Canada 🔗 Merging traditional questionnaires assessments with interactive gaming and AI/ML. This approach boosts engagement and reduces survey biases, signifying a significant leap in AI/ML healthcare applications.	Apr 2018

💼 PROFESSIONAL EXPERIENCE

Sustainability Researcher & Trainer, Hogeschool van Amsterdam (HvA) <ul style="list-style-type: none">Implemented OpenAI API for web crawling, automating energy data collection for devices and saving colleagues' time by up to 2 months per year.Developed a Power BI dashboard for key business KPIs, enhancing ICT sustainability planning and reducing manual reporting by 10 hours weekly.Aggregated unstructured data from 4+ sources, (e.g., spent data) to establish the foundation of a new dataset.	Sep 2023 – Jan 2024 Amsterdam, The Netherlands
Teacher Assistance for C programming, Imam Khomeini International University (IKIU) <ul style="list-style-type: none">Provided comprehensive guidance to 40 entry-level computer science students in C programming.Led interactive sessions on code debugging and code reviews, enhancing students' ability to write efficient and error-free code.Assisted in grading assignments and examinations, ensuring fair and accurate evaluation of student performance.	Sep 2017 – Sep 2018 Qazvin, Iran
Teacher Assistant for Social Networking Analysis using Python, Imam Khomeini International University (IKIU) <ul style="list-style-type: none">Provided instruction to 50 students on social network analysis and data collection methods, enhancing their practical and theoretical understanding.Served as the primary instructor for course segments, grading practical assignments for accurate assessment of student performance.	Dec 2017 – Mar 2018 Qazvin, Iran

 **ACADEMIC SKILLS**

- Methodology Development**
Qualitative, Quantitative, and mixed-methods approaches
- Academic Writing**
Co-authoring, Plagiarism Avoidance, Knowledge Organisation Skills, and LaTeX (overleaf)
- Ethical Research Practices**
Knowledge of ethical considerations in research, including human subjects protection and data privacy

- Data Collection**
Experiments, Surveys, Interviews, and Archival Research
- Time Management**
Managing time effectively, balancing research, writing, teaching, and personal commitments.

 **TECHNICAL SKILLS**

- Primary Programming Languages**
Advanced Python, R Scripting, and familiarity with C and Shell Scripting
- Sustainability and Life Cycle Analysis**
Carbon Footprint Analysis, Resource Efficiency, Renewable Energy Systems, Sustainability Reporting, Environmental & Social Impact Valuation, Life Cycle Assessment (LCA), and Sustainable Development Goals (SDGs) Integration
- Data Mining**
Web Crawling and Scraping, Open Source Intelligence Techniques, Pattern Recognition, Text Mining
- Software Engineering & Architecture**
Software Architecture: Application Framework Design, Microservices Architecture, SOLID Principles, Object-Oriented Development, UML, Clean Coding & Refactoring
Version Control & Deployment: Git, GitHub, and GitLab
- Web & API Development**
Frontend Development: HTML, CSS
Backend Development: Flask
API Design & Development: REST, Fast API, and OpenAPI
- Data Governance & Security**
Data Privacy Laws (GDPR), Data Retention Policies, Secure Data Handling Practices, Data Encryption and Anonymization Techniques

- Machine Learning & AI**
Supervised and Unsupervised Learning, Reinforcement Learning, Recommendation Systems, Deep Learning (TensorFlow, PyTorch), Natural Language Processing, Predictive Analytics, and AI Model Deployment
- Data Analysis & Visualization**
PowerBI, Statistical Analysis, Interactive Reporting, and Data Storytelling
- Business Process Analysis & Modeling**
BPMN (Business Process Model and Notation), Process Improvement, Stakeholder Analysis, Innovative Risk Solutions, and Qualitative Analysis
- Microsoft Azure Services**
VMs (Virtual Machines), AKS (Azure Kubernetes Service), App Service (Azure App Service), Cosmos DB (Azure Cosmos DB), Blob Storage (Azure Blob Storage), and Functions (Azure Functions)
- Big Data Processing & Analytics**
Databases (PostgreSQL, MongoDB, MySQL), Information Retrieval, Large-scale Data Warehousing, Hadoop Ecosystem, and Spark
- Augmented Reality (AR)**
Unity3D, ARKit, ARCore, Vuforia, and Agile methodologies

 **SOFT SKILLS**

- Adaptability**
Innovative Thinking, Resilience, and Versatility
- Effective Communication**
Active Engagement, Non-Verbal Communication (Utilizing body language, eye contact, and tone of voice)
- Active Listening**
Patience and Open-Mindedness, Empathetic Engagement, and Reflective Listening
- Cross-Cultural Competence**
Adaptive Communication and Interpersonal Sensitivity
- Conflict Resolution**
Problem Identification and Analysis, Constructive Feedback, and Mediation and Facilitation

 **LANGUAGES**

- English
- Persian
- Dutch (B1)

 **PROJECTS**

- User-Friendly and Insightful Sustainability ICT Dashboard,**
Green Office of Hogeschool van Amsterdam (HvA)
 - Collaborated closely with a team dedicated to enhancing energy efficiency, emphasizing my proficiency in managing intricate data workflows.
 - Engineered Power BI dashboards at HvA Green Office, streamlining energy data visualization to support efficiency efforts

Jan 2024
- Analyzed Sustainability Surveys,** PricewaterhouseCoopers Netherlands (PwC Netherlands)
 - Designed and executed a specialized survey on sustainable recruitment, achieving participation from over 300 individuals.
 - Used R programming for comprehensive data analysis and Excel for data visualization.
 - Delivered data-driven visualizations and presentations, integrating quantitative and qualitative insights.

Jan 2023

Evaluating Programming Languages and Their Energy Consumption , VU Amsterdam <ul style="list-style-type: none"> Analyzed WASM performance using four programming languages; identified C and Rust as top energy-efficient options. Employed Python to aggregate energy usage data and R for advanced data visualization. 	Sep 2022
Innovations in Healthcare: Data Analysis and Machine Learning Models for Sport Activities , VU Amsterdam & University of Amsterdam <ul style="list-style-type: none"> Collected, aggregated, and cleansed data; trained a machine learning model to classify 3 sport activities. Achieved a predictive model accuracy of 73% in distinguishing between the three activities. 	May 2022
Insulin Pump Simulator , VU Amsterdam & University of Amsterdam <ul style="list-style-type: none"> Engineered an Insulin Pump Simulator, showcasing teamwork and systems engineering. Produced key project artifacts (requirements, analysis, design, code, tests), demonstrating applied knowledge and communication. Emulated safety-critical systems with Arduino and C++, blending software and hardware for practical learning. 	Apr 2022
Uncovered Experts in Q&A Communities Through Social Network Analysis , VU Amsterdam & University of Amsterdam <ul style="list-style-type: none"> Employed web crawling and scripting to analyze Stack Overflow data, identifying experts based on verified answers. Created a tool to visualize expertise distribution using heatmaps, aiding recruiters in pinpointing skill-specific talent. 	Nov 2021
Developing AI-Based Blood Sugar Monitoring Device Architecture for Philips E-Health , VU Amsterdam and Philips <ul style="list-style-type: none"> Engaged in a 4-month Philips and Vrije University of Amsterdam's project during my master program, developing a personalized blood sugar device architecture. Operated UML, sequence diagrams, and other architectural modeling tools to conceptualize and refine the software design. 	Sep 2021
User-Friendly Augmented Reality Tool for Maintenance: Streamlining Tasks and Improving Operational Reliability <ul style="list-style-type: none"> Used Vuforia Unity SDK in a bachelor's AR project for innovative solutions. Created an AR troubleshooting tool, showing strong problem-solving skills. 	Jun 2018
Gamified Questionnaire for Diagnosing Mental Health Disorders <ul style="list-style-type: none"> Gained expertise in machine learning and gamification, with strong teamwork skills. Created 12 ADHD diagnostic mini-games for children, aligned with DSM-5 criteria. Enhanced ADHD diagnosis accuracy using machine learning on gameplay data, minimizing subjective bias. 	Jan 2017



AWARDS

Awarded 2nd Place for Startup Idea in the Entrepreneurship and AI Course , Vrije Universiteit Amsterdam	Apr 2022
Selected for direct admission to the Computer Science graduate program as an elite student, bypassing the entrance exam , Imam Khomeini International University (IKIU)	Sep 2020
Ranked 2nd in Overall GPA Among Graduate Students in the Computer Science Department , Imam Khomeini International University (IKIU)	Sep 2019



HOBBIES

Watching Formula One Competition, Watching Science Fiction Movies, Travelling and Cooking