DANIAL AMIN
Doctoral Student | Doctoral Researcher
+33 6 77184151 | writetodanialamin@gmail.com | linkedin | portfolio | github | scholar | ORCID | Paris, France

PROFILE SUMMARY

As a PhD candidate, I combine data science and AI expertise with a focus on developing fair and ethical AI systems for marginalized communities. Through my work with machine learning, large language models, and data-driven approaches, I create and analyze AI-generated personas that prioritize inclusivity. My experience includes using open-source LLMs and RAG to develop ethical AI solutions while building frameworks that ensure these technologies benefit underrepresented groups, and I aim to advance persona science by developing methods that detect and mitigate bias in AI applications.

SKILLS AND COMPETENCIES

Research Interests: AI-Generated Personas for Social Good, Bias Detection and Mitigation in AI Systems, Ethical AI for Marginalized Communities, Data-Driven Persona Creation, Generative AI and Deepfake Technologies, Cross-Cultural AI Applications, Algorithmic Fairness in Persona Development, AI Ethics and Policy Making, Inclusive Design for Global South, Quantitative and Qualitative Persona Evaluation Methods

AI & Data Science: Predictive Machine Learning, Reinforcement Learning, Deep Learning, Deep Neural Networks, RNNs & GANs, Bayesian Optimization, Generative AI, Large Language Models, Explainable AI, Retrieval Augmented Generation, Exploratory Data Analytics, Predictive and Prescriptive Analytics, Time Series Analysis & Forecasting

Programming Languages & Libraries: Python, R, Pytorch, PySpark, TensorFlow, Keras, Pandas, SciPy, Scikit-learn, Matplotlib, Seaborn, NLTK, MATLAB, LabVIEW, LangChain, LangSmith, Docker, SpaCy, Dragonfly, SQL

Software & Developer Tools: Tableau, Power BI, Looker, Minitab, SPSS, Visual Studio, PyCharm, Anaconda, JupyterLab, Docker

Cloud Architecture: Microsoft Azure, Google Cloud Platform, Amazon Web Services

Languages: English (C1), French (A1), Urdu (C2), Punjabi (C1)

EDUCATION

University of Vaasa, Finland	Jan, 2025 – Date
Doctor of Science in Business Administration and Economics	*On-Campus, Finland*
Rennes School of Business	Sep. 2023 – Sep. 2024
Masters in Business Administration	*On-Campus, France*
Massachusetts Institute of Technology	Aug. 2019 – Nov. 2023
Micro Masters in Statistics and Data Science	*Distance Learning, USA*
University of Wisconsin, Madison	Aug. 2022 – May 2023
Micro Masters in Business: Data, Insights, and Analytics	*Distance Learning, USA*
University of California San Diego	Aug. 2021 – Mar. 2023
Micro Masters in Data Science	*Distance Learning, USA*
Rochester Institute of Technology	Jan. 2022 – Nov. 2023
Design Thinking	*Distance Learning, USA*
Institute of Space Technology	Sep. 2013 – Aug. 2017
B.S. in Aerospace Engineering	*On-Campus, Pakistan*

EXPERIENCE

Research Experience

AI Research Scientist — Nov. 2024 - Present
Samsung Design Innovation Center — *On site, France*

- Developing the internal design companion for product and computational designers, combining the Generative and Predictive AI solutions to support data-driven design optimization.
- Spearheading development of multi-stages unstructured DB to act as ground truth for the LLM to enhance the data-driven design optimization process at SDIC.

AI & Data Science Lead — Sep. 2023 - Nov 2024
i13 Ventures Studio — *Remote, Ireland*

- Developed an LLM-based venture innovator, improving product performance by grounding and contextualizing the model through multi-query, re-ranking RAG algorithms.
- Created AI-based financial advisor, optimizing savings and investment plans by 25% through explainable AI advice using observer /observee agentic framework.
- Designed short, medium, and long-term strategy for business incubation using generative AI, enhancing incubation cycle impact by 30% with a focus on explainability.

Lead Data Scientist — Feb. 2022 - Feb. 2023
Automat Solutions Inc — *Remote, USA*

- Built machine learning pipelines for battery performance prediction, achieving 95% accuracy by accurately estimating the algorithmic uncertainties.

- Optimized battery material performance, increasing throughput by 40%, by using a combination of optimization algorithms.
- Automated ML pipelines, classifying chemical compositions with 90% precision, focusing on explainability and fairness.

Lead ML Engineer — Feb. 2021 - Feb. 2022
Omdena Inc — *Remote, USA*

- Improved image classification model accuracy by 12%, leading a team of 5 engineers to tackle recall minimization by incorporating HIL feedback.
- Developed an object recognition pipeline, enhancing detection accuracy by 15%, with a focus on reducing bias in image datasets.

Assistant Manager   Aug. 2017 - Nov. 2022
Government of Pakistan   *On-site, Pakistan*
- Implemented a fuel consumption estimator, increasing accuracy by 72%, by developing surrogate model.
- Developed a SMART Maintenance System, optimizing schedules for 52 aircraft components through anomaly detection algorithm in time series data.
- Introduced AI-enabled early warning systems, reducing flight risks by 27% through risk assessment models.

Management Experience

AI & Data Science Lead   Sep. 2023 - Nov. 2024
i13 Ventures Studio   *Remote, Ireland*
- Mentored and nurtured startups, increasing implementation of AI solutions by 50%, focusing on ethical AI and bias mitigation in emerging markets of South Africa.
- Envisioned AI and ML strategy, leading to a 15% improvement in organizational efficiency.

Head of Data Analytics — Lead Data Scientist   Feb. 2023 - Sep. 2023
Abacus Global   *On-site, Pakistan*
- Improved data processing speed by 40% and predictive analytics model accuracy by 25% through the implementation of a big data analytics framework.
- Led a cross-functional team to drive data-centric strategies, addressing biases and ensuring fair data practices.
- Developed solutions that improved customer satisfaction by 30% by addressing biases in data analysis.

Teaching Experience

Teaching Assistant   Aug. 2016 - Aug. 2017
Institute of Space Technology   *On-site, Pakistan*
- Assisted in Aero-Vehicle Performance and Design courses by providing hands-on tutorials and problem-solving exercises.
- Supported course material development, enhancing the learning experience for over 100 students by focusing on hands-on and applied content.

PUBLICATIONS

Working Papers

- **Toward using personas for inclusive design: The question of quantifying diversity in persona sets**   2025
  Amin, D., Salminen, J., Jansen, B., & Sethi, S. ,*Proceedings of the International Joint Conference on Artificial Intelligence*   *IJCAI'2025*

- **How Well Can LLMs Detect Bias in User Representation? Evaluating Holistic Bias in Personas Using Generative AI in Risk-Varying Educational Contexts**   2025
  Amin, D., Salminen, J., & Jansen, B.,*Proceedings of the International Joint Conference on Artificial Intelligence*   *IJCAI'2025*

- **Large language models (LLMs) in human-computer interaction: Using LLM-generated personas to model everything from minority views to entire ecosystems.**   2024
  Amin, D., Salminen, J., Jansen, B., Kaate, I., & Akhtar, W.,*In Artificial Intelligence & Large Language Models: A Scientific Perspective*   *CRC Press*

- **Generative AI Personas Considered Harmful? Examining the Risks of Algorithmic User Representations in HCI Design**   2024
  Amin, D., Salminen, J., Jansen, B., Shin, J., & Kim, D. H.,*International Journal of Human-Computer Studies.*   *IJHCS*

- **Analyzing Human-AI Interactions with AI-Generated Conversational Personas: An Evaluation of Interactive Persona System Challenges**   2024
  Salminen, J., Jung, S., Kaate, I., Xuan, T., Azem, J., Aldous, K. K., **Amin, D.**, & Jansen, B.,*Decision Support Systems*   *DSS*

- **"When AI Writes Personas": Analyzing Lexical Diversity in LLM-Generated Persona Descriptions**   2025
  Sethi, S., Salminen, J., **Amin, D.**, & J., Jansen, B.,*Extended Abstracts of CHI'2025*   *CHI'2025*

- **The Use of Large Language Models in HCI: A Critical Analysis of Synthetic Users**   2025
  Salminen, **Amin, D.**, Jung, S., & J., Jansen, B.,*Poster at Augmented Humans Conference*   *AH'2025*

Conference Papers

- **The Role of National Centers in Sustainable Development of Pakistan**   2021
  Naqvi, N., Ahmed, F., Ahmed, U., **Amin, D.**, & Malik, F. ,*International Conference on Aerospace Science and Engineering*   *IEEXplore*

- **Role of Private-Public Partnerships in Creation of Space Awareness and Outreach in Pakistan**   2021
  Naqvi, N., Ahmed, F., Ahmed, U., **Amin, D.**, & Malik, F. ,*International Conference on Aerospace Science and Engineering*   *IEEXplore*

- **Role of subject matter experts in creating awareness through space technology education and popularization (STEP): World space week celebrations — A case study**   2017
  Naqvi, N., Ahmed, F., Ahmed, U., & **Amin, D.**,*International Conference on Aerospace Science and Engineering*   *IEEXplore*

- **Unification of traditional and scientific pedagogy in Space Technology Education and Popularization (STEP): Space summer school—A case study**   2017
  Naqvi, N., Ahmed, F., Ahmed, U., & **Amin, D.**,*International Conference on Aerospace Science and Engineering*   *IEEXplore*

Courses

Bayesian Machine Learning for Optimization in Python   2023
Educative Inc   *Educative*

PROJECTS

Bob-The Startup Advisor
- Created a selection and scoring agent to assist innovation hubs around the globe in evaluating and selecting startups in emerging markets holistically using LLMs
- Developed and deployed an enterprise level contextualized and grounded large language model for supporting startups through ideation and incubation stage.
- **Tech Stack** :Python, LangChain, Pinecone, Azure, LangServe, FastAPI

Bayesian Optimization Network for Chemical Composition Optimization
- Implemented a project for generating chemical compositions and optimizing the process using targeted DNNs through BO, Active Learning, and Meta-learning models.
- **Tech Stack** :Python, DragonFly, Bayesian Neural Networks, Genetic/Evolutionary Algorithms

AI-Shyr: Where ML meets poetry
- A pre-LLM based poetry generator for Urdu language using corpus of local poets
- **Tech Stack** :Python, Streamit, RNNs, LSTM, nGrams,Space,NLTK

COURSES & CERTIFICATIONS

- Professional Certificate in **Artificial Intelligence and Machine Learning** by **European IT Certification Academy** — EITCA
- Program in **Data Science and ML: Making Data-Driven Decisions** by **MIT Institute for Data, Systems, & Society** — MIT IDSS
- Professional Certificate in **Data Analytics** by **Google** — Coursera
- Professional Certificate in **Project Management** by **Google** — Coursera
- Professional Certificate in **Data Science** by **IBM** — Coursera
- Specialization in **Deep Learning** by **Deeplearning.ai** — Coursera
- Specialization in **Natural Language Processing** by **Deeplearning.ai** — Coursera
- Specialization in **Reinforcement Learning** by **University of Alberta** — Coursera
- Complete Career track of **Data Scientist** by **365DataScience** — 365DataScience
- Expert track in **Data Science Fundamentals on Microsoft Azure** by **CloudSwyft and Microsoft** — FutureLearn
- Nano degree in **AI Programming with Python** by **Udacity** — Udacity
- Developer Certification in **Data Analysis with Python** by **FreeCodeCamp** — FreeCodeCamp

HONORS & AWARDS

International

- **Climate Change Scholar** for **French Excellence Scholarship** by **Campus France** — 2023-24
- **Forward Fellow** for **McKinsey Forward Program** by **McKinsey** — 2022
- **Next Generation Tech Booster** Scholarship for **Data Science** Track by **Udacity** — 2022
- **AWS Scholarship** for **ML Engineering Program** by **Udacity** — 2022
- **Honors** for **Applied Data Science Lab** by **World Quant University** — 2022
- **Future Learn Award** for **Thriving in Digital Workplace** by **University of Leeds** — 2021
- **Future Learn Award** for **Solving Problem with Technology** by **University of Leeds** — 2021
- **Bronze Medal** for **Poster Competition** by **Asian Science Camp** — 2015

National

- **National Champion** for **Office Specialization** by **Microsoft** — 2016
- **Salutatorian** for **Class of 2017** by **Institute of Space Technology** — 2017
- **Cum Laude** for **Class of 2017** by **Institute of Space Technology** — 2013-17
- **Outstanding Talent Award** for **Class of 2017** by **Institute of Space Technology** — 2017
- **International Achievement Award** for **Class of 2017** by **Institute of Space Technology** — 2016-2017

PARTICIPATION & VOLUNTEERING

- Participant, **Hi Paris Summer School for AI & Data for Science** , Business and Society — 2024
- Facilitator, **Space Summer School at National Center of GIS & Space Applications** — 2017-23
- Resource Person, **World Space Week** at Institute of Space Technology — 2015-23
- Keynote Speaker, 5th - 7th **International Conference on Aerospace Science and Engineering** — 2017-21