Kanishk Verma

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Education

PhD Computer-Social Science *Sept 2021 - August 2025*
Dublin City University, Ireland

- *Thesis*: Data-driven Toolkit to Combat Cyberbullying amongst Teens (project website)
- *Description*: This interdisciplinary doctoral research integrates social science theories with AI development, using co-design sessions with teens to create test cases that enhance generative AI's ability to detect and prevent online bullying.

MSc. Computer Science *Sept 2019 - August 2020*
Dublin City University, Ireland

- *Thesis*: Implicit aspect-based opinion mining and analysis of airline industry based on user-generated reviews. (research article)

Bachelor of Engineering in Information Technology *Aug 2012 - July 2016*
University of Mumbai, India

- *Coursework*: Relational database management systems, Data structures and algorithms, Web programming, Object-Oriented Programming

Experience

Research Experience

Associate Researcher *Dublin, Ireland*
DCU Anti Bullying Centre, UNESCO Chair on Bullying and Cyberbullying *Sept 2021 – Present*

- Collaborate with interdisciplinary researchers on the *"Coimisiún na Meán: Online Safety Code - Call for Inputs"*, developing evidence-based strategies to enhance online safety. Address cyberbullying's impact by applying empathy and navigating research ambiguity. (Article)
- Participate in strategic meetings, contributing innovative insights and recommendations that shape research initiatives and future projects while fostering a collaborative culture.
- Organize workshops bridging computational methods and social science research, encouraging interdisciplinary dialogue and applying technology to complex societal issues.

Research Assistant *Dublin, Ireland*
Adapt Centre, SFI *Sept 2020 – Aug 2021*

- Conducted a meta-analysis of 150+ academic papers and industry tools, employing large-scale data processing techniques to extract insights for Meta's (Facebook/Instagram) Content Policy Grant project.
- Designed and executed experiments with state-of-the-art machine learning and deep learning models, achieving an 81% average F1-score in classifying cyberbullying-related user-generated content.
- Led cross-functional collaboration between social and computational science experts, coordinating co-design focus group studies with 30+ teenagers to develop data-driven, socially-informed cyberbullying prevention strategies.

Industry Experience

Data Scientist Intern *Dublin, Ireland*
Radmol AI (Durotimi AI) *March 2020 – Aug 2020*

- Developed an intelligent framework using language modeling and deep learning techniques, reducing the time for physician analysis of colorectal cancer radiology reports by 15%.
- Conducted statistical analyses, including hypothesis testing to validate model performance and ensure clin-

ical relevance of AI-driven insights.

Software Analyst *Mumbai, India*
Accenture *Nov 2016 – May 2019*

- Designed and implemented an automated reporting system that uses relational databases and SQL queries, integrating with Selenium and Java, resulting in a 12% boost in efficiency of the social media content moderation client over a fiscal year.
- Led multiple knowledge transition sessions with diverse stakeholders, driving 8% time savings for client businesses through optimised knowledge sharing and streamlined processes.

Teaching Experience

Teaching Assistant (Part Time) *Dublin, Ireland*
Dublin City University *Sept 2021 – Present*

- **Introduction to Python Programming & R Programming (First-Year Students)**
  - Conduct weekly tutorials for students across multiple disciplines, providing foundational programming instruction.
  - Guide students through coding exercises and tutorial assignments, offering individualized and group-based support.
- **Object-Oriented Programming (Second-Year Computing Students)**
  - Lead tutorial sessions on key object-oriented programming concepts and data structures such as arrays, linked lists, stacks, queues, trees, and graphs.
  - Support students with debugging exercises and implementation improvements.
- **Comparative Programming Languages (Third-Year Computing Students)**
  - Facilitate tutorials exploring programming paradigms, including functional, logical, and object-oriented approaches.
  - Assist with grading assignments, coursework evaluation, and organizing supplementary sessions to clarify abstract concepts.
- **Final-Year Project Supervision (Bachelor of Data Analytics & Business Computing & Masters in Computer Science)**
  - Provide guidance on research methodologies, data collection, and implementation strategies.
  - Review project reports and code, offering constructive feedback.
  - Assist students in troubleshooting technical challenges and optimizing their project workflows.

Lecturer (Part Time) *Dublin, Ireland*
Institute of Business and Technology (IBAT) *Jan 2024 – Present*

- **Business Mathematics**
  - Design and develop course content, including lecture slides, study materials, and assessments.
  - Deliver lectures covering core and advanced mathematical concepts relevant to business applications.
  - Evaluate students through assignments and exams, ensuring learning objectives are met.
  - Offer supplementary sessions to assist students in mastering mathematical principles.
- **Certificate in Access for Higher Education – Introduction to Computers**
  - Develop course materials and practical tutorials tailored to students with varying levels of technical experience.
  - Teach foundational computer skills, including MS Office Suite, file management, and advanced Excel techniques.
  - Assess student progress through structured evaluations and provide targeted feedback for improvement.

Technical Skills

- **Languages**: Python, R, C++, Java, SQL.
- **Frameworks**: PyTorch, Hugging-Face Transformers, LoRA (Low-Rank Adaptation), Selenium, Multi-modal LLMs (MLLM).
- **Cloud Technologies**: AWS (EC2, S3), Google Cloud Platform (GCP), Firebase.
- **Web Development Frameworks**: Django, Flask, Dash.

Awards & Honors

- **Early Stage Researcher of the Year, 2024**
  Recognized as Early Stage Researcher of the Year by the ADAPT Centre (Science Foundation Ireland) for PhD research with significant societal impact, funded by a prestigious Google and Irish Research Council Fellowship, and producing impactful publications in the field. (Article)
- **Best Student Contribution Award, 2024**
  Awarded the best student contribution award by the Adapt - Science Foundation Ireland Research Centre, for leading and contributing to interdisciplinary projects at the 3rd ADAPT Annual Scientific Conference, Ireland (2024). (Article)
- **Online Content Safety Fellowship, 2021**
  Awarded the prestigious Irish Research Council (IRC) and Google Ireland fellowship to conduct a 4-year doctoral research project on online safety. (Article)

Publications

- **Journal Articles**

  1. **Leveraging Machine Translation for Cross-lingual Fine-grained Cyberbullying Classification amongst Pre-adolescents**
     Venue: Journal of Natural Language Engineering; DOI
  2. **Effectiveness of Artificial Intelligence–Based Cyberbullying Interventions From Youth Perspective**
     Venue: Social Media + Society; DOI

- **Conference Papers**

  1. **Beyond Binary: Towards Embracing Complexities in Cyberbullying Detection and Intervention - a Position Paper**
     Venue: Joint International Conference - Computational Linguistics and Language Resources and Evaluation (COLING-LREC) 2024; DOI
  2. **Examining the Effectiveness of Artificial Intelligence-Based Cyberbullying Moderation on Online Platforms: Transparency Implications**
     Venue: Association of Internet Researchers (AoIR) Selected Papers of Internet Research (2022); DOI

- **Workshop Papers**

  1. **DCU at SemEval-2023 Task 10: A Comparative Analysis of Encoder-only and Decoder-only Language Models with Insights into Interpretability**
     Venue: Semantic Evaluation (SemEval) within the Association of Computational Linguistics (ACL 2023); DOI
  2. **Can Attention-based Transformers Explain or Interpret Cyberbullying Detection?**
     Venue: Third Workshop on Threat, Agression Cyberbullying (TRAC) within the COLING 2022 ; DOI
  3. **Benchmarking Language Models for Cyberbullying Identification and Classification from Social-media Texts**
     Venue: Workshop on Language Technology and Resources for a Fair, Inclusive, and Safe Society within the 13th Language Resources and Evaluation Conference (LREC 2022); DOI

Professional Development & Service

- **Demonstrator, AI in My Life Program** (2023 - Present)
  Responsible for visiting secondary schools and conducting interactive sessions on artificial intelligence, designed to inspire students (ages 14-15) to explore AI topics and integrate AI into their academic curriculum. The program aims to engage young minds with real-world applications of AI. (Program Link)
- **Reviewer, Peer-Reviewed Journals and Conferences**
  Actively serving as a reviewer for high-impact journals and conferences in the field of AI and computer science, including:
  - IEEE Transactions on Affective Computing (Q1 Journal)
  - International Journal of Bullying Prevention (Q1 Journal)
  - PeerJ Computer Science (Q1 Journal)
  - Annual Meeting of the Association for Computational Linguistics (ACL) (A* Conference)

  Engaged in evaluating cutting-edge research and providing constructive feedback for publication and conference acceptance.

Projects

- **Machine Learning for Parkinson's Disease Severity Prediction**
  This project explored the use of machine learning techniques to predict Parkinson's Disease (PD) severity using unstructured sensor data from smartwatches and smartphones. By leveraging ensemble methods such as voting and stacking, the study analyzed daily-life sensor data to model symptom severity in relation to individuals' medication states. The models achieved accuracy ranging from 34% to 81%, depending on the dataset and label. (Article)
- **Visualization Project: Analyzing Game of Thrones Character Adaptation**
  This project involved data scraping from the Game of Thrones book series and utilizing Python for data extraction and visualization. Using Python WordClouds, to conduct in-depth analysis of character appearances and screen time to identify which book characters were omitted from the television adaptation. (GitHub)
- **AI Tic-Tac-Toe Game with Minimax Algorithm**
  Developed a Tic-Tac-Toe game using Python, implementing the Minimax algorithm for AI decision-making. The AI plays as 'X' against a human player ('O'). Built with PyGame, NumPy, and mathematical logic, the project showcases algorithmic decision-making and game strategy optimization. (GitHub)