Raluca D. Gaina

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Game analytics and quantitative research specialist with a PhD and 10+ years of experience in AI and games. Skilled in Python/R data analysis, experimental design and simulation-based evaluation. Co-founder of Tabletop R&D, using AI-driven playtesting to help game studios analyse game balance and make evidence-based design decisions. Comfortable integrating AI tools into analytical workflows to improve efficiency and insight. Combines rigorous research methods with practical game development experience and clear communication of findings to technical and non-technical stakeholders.

Skills

Data Analysis & Research

- ✔ Quantitative analysis of game logs, simulation outputs and research data
- ✔ Experimental design, hypothesis testing and comparative evaluation
- ✔ Simulation-based analysis, optimisation and performance measurement
- ✔ Statistical interpretation and evidence-based recommendations

Programming & Tools

- ✔ Python, R, Java, SQL (research use)
- ✔ Data processing, statistical analysis and visualisation (CSV, JSON, structured datasets)
- ✔ C#, Unity, React/TypeScript
- ✔ Machine learning, reinforcement learning, evolutionary algorithms, generative AI, LLMs

Game Analytics & Product Insight

- ✔ Game mechanics, balance and system behaviour
- ✔ Simulation-driven evaluation of design changes
- ✔ Metrics, performance evaluation and design recommendations
- ✔ Translating analytical findings into actionable insights
- ✔ Communicating complex quantitative and technical findings to varied audiences
- ✔ Interdisciplinary collaboration and stakeholder engagement
- ✔ Mentoring, teaching and team development

Experience

Co-founder / Director

Tabletop R&D | 2023 – Present

- Built an AI-driven simulation platform for analysing tabletop games, running thousands of simulated playthroughs to evaluate game balance and compare design alternatives.
- Underdog Games — Biggerfish: Analysed 15,466 games across 2–5 players using 589 AI players. Found that, at five players, games ended through player failures more often than successes, revealing an unintended design outcome that prompted the designer to revisit the game's design.
- Worked with commercial clients including Bright Eye Games, AP Board Games and Underdog Games, translating design questions into computational experiments and actionable findings.
- Secured £120k+ in grant funding to support product development and innovation.
- Defined product direction, technical roadmap and AI integration strategy, balancing research-led innovation with practical client and product requirements.
- Communicated technical methods, analytical findings and product opportunities to stakeholders with varied technical backgrounds.

Game AI Researcher & Lecturer
Queen Mary University of London | 2021 – 2026

- Designed and developed AI systems, simulation tools and computational methods for investigating game behaviour and evaluating decision-making systems.
- Conducted research involving experimental evaluation, quantitative comparisons and analysis of algorithm performance in game environments.
- Led and delivered undergraduate and postgraduate courses in Game AI and game development, teaching complex technical concepts to diverse audiences.
- Supervised 20+ student projects, supporting project design, implementation, evaluation and communication of results.
- Served as a PhD supervisor and research impact coordinator within the IGGI Doctoral Programme, helping connect research outcomes with wider academic and industry impact.

Research & Teaching Roles (AI & Games)
Queen Mary University of London / University of Essex | 2016 – 2021

- Developed and evaluated algorithms for planning, decision-making and game-playing, using structured experiments to compare approaches and measure performance.
- Worked with game and AI research environments, including research involving SQL and game-related data in the General Video Game AI (GVGAI) competition.
- Developed and delivered teaching in AI, game development and computational creativity.

Selected Data & Game Analytics Projects

1. **AI Playtesting & Simulation Platform — Tabletop R&D**
   Built a platform using AI agents to simulate and analyse tabletop games, evaluate design alternatives and inform game balance, based on the Tabletop Games Framework.
2. **General Video Game AI Research**
   Developed planning and evolutionary algorithms for game-playing agents; contributed to AI competitions and performance evaluation.
3. **Multi-Agent Reinforcement Learning Environments — Microsoft Research**
   Designed competitive environments for benchmarking AI agent behaviour and performance.
4. **Game Development & Interactive Systems**
   Built game prototypes and systems using Unity/C# and Java.

Education

- [2021] PhD, Intelligent Games & Game Intelligence – Queen Mary University of London
- [2016] MSc, Computer Games (Distinction) – University of Essex
- [2015] BSc, Computer Games (First Class) – University of Essex

Selected Leadership & Community

- General Chair, IEEE Conference on Games 2026
- Organiser, London Game AI Meetup (2019–2024)
- Chair and reviewer across major AI & games conferences and journals
- Mentoring roles and part of Athena Swan and Women in Games teams

Research Publications

A complete list of publications is available at https://rdgain.github.io/publications