

Edgar A. Duéñez-Guzmán

AI Research & Engineering Leader • Multi-Agent Systems, Cooperative AI, Reinforcement Learning

CONTACT

London, United Kingdom
duenez@gibran.ai
+44 (0) 7786 049710
duenez.evolicious.org
linkedin.com/in/duenez
Google Scholar • GitHub
ORCID 0000-0002-6212-9104

IMPACT AT A GLANCE

3,900+
Citations • h-index 25 • i10-index 39

50+
Publications across *Nature MI*,
PNAS, NeurIPS, ICML

11 years
At Google & DeepMind — 8 at
DeepMind, ending as Staff
Research Scientist

2,400+
GitHub stars on open-source
frameworks I co-created

600+
Competitors across 100+ teams
in the NeurIPS contests I
organised

CORE EXPERTISE

- **Multi-agent systems** & multi-agent RL
- **Cooperative & social AI**; emergent norms
- **LLM agents** & generative social simulation
- **Evolutionary computation** & game theory
- **AI safety**, alignment, algorithmic bias
- **Benchmark design**; research-to-product translation
- Technical strategy & team leadership

PROFILE

AI leader with **15+ years spanning frontier research and production engineering**. Co-led multi-agent intelligence at Google DeepMind, where I set technical strategy for a multidisciplinary team behind 20+ top-venue publications and created the open-source benchmarks the cooperative-AI field now standardises on. Equally at home shipping: launched the **WaveNet voice for Google Assistant** and the first ML index-selection system for **Google Image Search**. First author in *Nature Machine Intelligence* and *PNAS*. Now co-founder and CTO of a venture-backed AI research company.

EXPERIENCE

Co-founder & Chief Technology Officer Feb 2025 – Present
Gibran AI • London, UK

- › Co-founded a research-driven AI company with three colleagues; own **technical strategy, research direction and the engineering organisation** from zero.
- › Raised a **\$2.6M seed round led by Together Fund** (Jul 2025), the fund founded by the founders of Freshworks and Eka Software.
- › Architecting **nature-inspired adaptive intelligence** — evolutionary search and multi-agent methods fused with foundation models to generate novel, useful data where signal is sparse, noisy or causally opaque. Applications in medical treatments, theoretical science, quantum computing, and more.
- › Technical **advisor to Phytgl, Inc.** (California), on research strategy and model architecture.

Staff Research Scientist Jul 2024 – Jan 2025
Google DeepMind • London, UK

- › Co-led **Concordia**, an open-source library for generative agent-based social simulation (**1.6k+ GitHub stars**), and chaired the associated **NeurIPS 2024 Concordia Contest** on cooperative intelligence in language agents.
- › Directed research evaluating the generalisation of LLM-based agents in mixed-motive scenarios.

Staff Research Engineer Nov 2021 – Jul 2024
Google DeepMind • London, UK

- › **Co-led the Multi-Agent General Intelligence (MAGI) team**, producing **20+ publications** at ICML, NeurIPS, AAMAS, PNAS and *Nature Machine Intelligence*.
- › Served as **Engineering Lead** for the multi-agent group: set technical strategy, and designed and led a **four-engineer team** building the distributed multi-agent RL framework that became the team standard — migrating **~40% of all experiments** off a legacy codebase within a year.
- › Co-created **Melting Pot**, the field-standard open-source benchmark for multi-agent RL generalisation — 50+ substrates, 250+ scenarios, **836+ GitHub stars** — and organised the **NeurIPS 2023 Melting Pot Contest**, drawing **600+ participants across 100+ teams** and 400+ submissions worldwide; negotiated **\$50k in cloud credits** for participants.
- › **Founded and led** the organisation's first interdisciplinary multi-agent programme on **fairness and social impact**, convening researchers across causal ML, ethics, fairness and multi-agent. Introduced the *perceptual interventions* method, since reused across three further projects. Output: two *PNAS* papers and one *Cognitive Science* paper.
- › Supervised **six research interns** — all of whom published — and co-advised an MIT postdoc with Prof. Dylan Hadfield-Menell; mentored a dozen-plus junior researchers.

TECHNICAL

- Python · C++ · JAX · TensorFlow
- Open educational materials: **google-deepmind/educational**
- Large-scale distributed ML systems
- RL training, evaluation & OSS infrastructure

EDUCATION

Ph.D., Computer Science
The University of Tennessee, Knoxville
2005 – 2009

M.S., Applied Mathematics & Computing
Mathematics Research Centre (CIMAT), Mexico
2004 – 2005

B.S., Mathematics
University of Guanajuato, Mexico
1999 – 2004

HONOURS & AWARDS

- **ICML 2021 Oral** — top ~3% of submissions
- **10+ SPOT** and **20+ Peer bonuses**, Google & DeepMind (2014–2024)
- **Lathisms honoree** (2016) — Latin@s & Hispanics in the Mathematical Sciences; featured by the AMS in *Notices of the AMS* 63(9)
- Invited author, **American Mathematical Society**, *Mexican Mathematicians Abroad*, Contemporary Mathematics vol. 657 (2016)
- Featured researcher, **Life at DeepMind** campaign (2022)
- **World Finalist** (Honourable Mention), ACM International Collegiate Programming Contest (2003)
- Mexican national team, **40th International Mathematical Olympiad** (1999)
- **Silver Medal**, XIII Ibero-American Mathematical Olympiad (1998)

EXPERIENCE (CONTINUED)

Senior Research Engineer

Jul 2019 – Oct 2021

Google DeepMind · London, UK

- › Built **RL Puppet**, a scriptable expert-agent framework for co-player evaluation, adopted across the multi-agent group.
- › Led development of Melting Pot's precursor environment library — **30–40 monthly active users** across a dozen research projects, cutting new-experiment setup from days to about an hour. The resulting Melting Pot paper was selected as an **ICML 2021 Oral** (top ~3%).
- › Co-designed **Malthusian Reinforcement Learning**, an ecological and evolutionary framework for population-based learning.

Senior Research Engineer

Mar 2017 – Jul 2019

DeepMind for Google · Mountain View, USA

- › **Launched WaveNet**, the neural AI voice for the Google Assistant, reaching millions of users.
- › Led the **expressiveness upgrade** to that production speech model — the largest voice-quality improvement since its launch — and built the listening-test evaluation system adopted as the standard for assessing every new voice and language.
- › Built a large-scale **wind-energy prediction system**; DeepMind reported it raised the value of its wind energy by **roughly 20%**.
- › Co-developed **Lyapunov-based safe reinforcement learning** — the first framework guaranteeing constraint satisfaction throughout learning; now the most-cited work in that line (**900+ citations**).

Senior Software Engineer

Nov 2015 – Mar 2017

Google · Mountain View, USA

- › Designed and shipped the **first machine-learning system for index selection in Google Image Search**, and was tech lead for its scoring system: pipelines recording **half a trillion** click and impression records, scoring **1.5M+ images per second**, behind a signal service sustaining **200K+ QPS**.
- › Removed **20% of indexed images at quality-neutral impact** — one query in ten thousand saw any change in its top eight results — freeing roughly **5% of Search's serving memory and flash footprint**.
- › Core member of a high-profile, confidential policy and legal engineering team.
- › Rebuilt Google's official technical-interview training materials and **appear as one of the two engineers** in *How to: Work at Google — Example Coding/Engineering Interview*, now at **7.5M+ views**.

Software Engineer

Oct 2013 – Oct 2015

Google · Mountain View, USA

- › Contributed to a multi-year search-scalability programme, delivering a **dynamic index-partitioning scheme** that filtered **25% of documents at neutral quality** for a 0.5% throughput gain and a **2.5% tail-latency improvement** in production.
- › Coached **100+ interview candidates**, with the highest success rate company-wide.

Postdoctoral Fellow

Feb 2010 – Sep 2013

Harvard University & KU Leuven · Cambridge, USA & Leuven, Belgium

- › Research on the **evolution of cooperation and punishment** in human and animal societies, with David Haig (Harvard) and Tom Wenseleers (KU Leuven).
- › Developed grammatical-evolution methods for the **automatic programming of robot swarms** (GECCO 2013; *PLOS Computational Biology* 2015).

COMMUNITY & OUTREACH

- **Top coach** in Google's diversity-hiring programme — 50+ sessions, **five hires** (most of any coach); coached candidates hired at a **15% higher rate** than baseline
- Co-designed and facilitated a **company-wide allyship programme**; trained new facilitators
- Workshops for **Women Who Code**, Black Tech Fest, In2Science, ColorCode

LANGUAGES

Bilingual — Spanish and English

SELECTED PUBLICATIONS

- **Duéñez-Guzmán, E. A.** et al. *Perceptual interventions ameliorate statistical discrimination in learning agents*. PNAS 122(25), 2025. — first author
- Köster, R., **Duéñez-Guzmán, E. A.**, Cunningham, W. A., Leibo, J. Z. *Tabula rasa agents display emergent in-group behavior*. PNAS 122(25), 2025.
- **Duéñez-Guzmán, E. A.**, Sadedin, S., Wang, J. X., McKee, K. R., Leibo, J. Z. *A social path to human-like artificial intelligence*. Nature Machine Intelligence 5(11), 2023. — first author
- Trivedi, R. S., Khan, A., Clifton, J., Hammond, L., **Duéñez-Guzmán, E. A.** et al. *Melting Pot Contest: charting the future of generalized cooperative intelligence*. NeurIPS 2024, Datasets & Benchmarks Track.
- Leibo, J. Z., **Duéñez-Guzmán, E. A.** et al. *Scalable evaluation of multi-agent reinforcement learning with Melting Pot*. ICML 2021 — Oral. 200+ citations.
- Chow, Y., Nachum, O., **Duéñez-Guzmán, E. A.**, Ghavamzadeh, M. *A Lyapunov-based approach to safe reinforcement learning*. NeurIPS 2018. 900+ citations.
- Full list of 50+ publications: scholar.google.com/citations?user=Hl5wdRMAAAAJ

OPEN SOURCE & RESEARCH SOFTWARE

- **Melting Pot** — co-creator. The field-standard benchmark for multi-agent RL generalisation: 50+ substrates, 250+ scenarios, 836+ GitHub stars. Led the open-sourcing; the 2.0 release doubled the suite and made the engine 5× faster.
- **Concordia** — co-lead. Generative agent-based social simulation with language agents. 1,600+ GitHub stars.
- **DeepMind Lab2D** — co-author. Two-dimensional environment engine for multi-agent research.
- **google-deepmind/educational** — co-led the public release. Colab notebooks introducing AI to secondary-school students; author or co-author of three.

EXTERNAL FUNDING SECURED

- **£150,000**, Cooperative AI Foundation — with co-organisers, funding a postdoctoral researcher at MIT plus prizes and travel grants for the NeurIPS 2023 contest.
- **\$50,000** in Google Cloud credits — negotiated for contest participants.

SELECTED TALKS & INVITED LECTURES

- **Invited Speaker, ANZIAM 2026** — 62nd Annual Meeting of the Australia and New Zealand Industrial and Applied Mathematics society. Canberra, February 2026. One of eight invited speakers, alongside Kavita Ramanan (Brown) and Mary Silber (Chicago).
- **Keynote speaker** — *Defending human autonomy in the age of AI enshittification*. “Doing AI Differently”, The Alan Turing Institute & UKRI, Royal Academy of Engineering, London, March 2025.
- *Studying Social Phenomena with AI*. Tufts University SIAM Student Chapter, October 2023.
- **SIAM Visiting Lecturer** — invited lectures at University of Oxford · Harvard University · Tufts University · the Smithsonian Institution · Gothenburg University · Technological University Dublin · Oxford AI · Google Cloud Research Innovators.
- **Competition chair** — NeurIPS 2023 Melting Pot Contest and NeurIPS 2024 Concordia Contest.