Cindy Eliana Levi

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Research Interests

I am a computer scientist seeking a PhD in a socially oriented research program, where I can put rigorous technical skills at the service of human problems. My interests lie at the intersection of computation and the social and psychological sciences: computational mental health, speech and language as windows into psychological states, and the design and evaluation of AI systems that affect people's well-being. I am particularly drawn to work that pairs methodological rigor (formal reasoning, machine learning, statistical modeling) with real-world social impact, and to research questions whose answers change how people are cared for. I am also interested in the computational analysis of literary texts.

Education

M.Sc. in Computer Science 2025 – Aug. 2026
University of Buenos Aires (UBA), Faculty of Exact and Natural Sciences

– Thesis: *Scaling Compositional Controller Synthesis with a New Minimization Technique for Branching Bisimilarity*. Advisors: Sebastián Uchitel and Hernán Gagliardi.

B.Sc. in Computer Science 2021 – Dec. 2024
University of Buenos Aires (UBA), Faculty of Exact and Natural Sciences

– GPA: 8.23 / 10.00 (3.29 / 4.00 converted), above program average.

Publications & Presentations

Manuscripts in preparation

[1] **C. E. Levi** and D. M. Low. "LLM Tracker: Open tools for coding psychological constructs in text with large language models." Methods review for clinical and psychological researchers. In preparation.

Conference presentations

[2] **C. E. Levi**, H. Gagliardi, and S. Uchitel. "Scaling compositional controller synthesis with a new minimization technique for branching bisimilarity." Talk at FACAS 2026, *Taller Argentino de Fundamentos para el Análisis y la Construcción Automática de Software*, Villa Carlos Paz, Córdoba, Argentina, Mar. 2026.

Open-source research software

[3] **C. E. Levi**. Tutorials "Removing personal information before LLM coding" and "From coded quotes to a map," contributed to *llm_tracker*, Child Mind Institute, 2026. github.com/childmindresearch/llm_tracker

Research Experience

ARC Lab (AI, Risk and Contemplative Science), Child Mind Institute 2026 – Present
Volunteer Research Assistant *Advisor: Daniel M. Low, PhD*

– The lab studies mental health through computational analysis of speech and language data.
– Co-writing a methods manuscript introducing clinicians to the lab's open-source tools *llm_tracker* (LLM-based coding of psychological constructs in text) and *anonymize-pii* (de-identification).
– Wrote two tutorials, merged into *llm_tracker*: de-identifying clinical text before LLM coding, and mapping LLM-coded quotes with sentence embeddings to check whether constructs are separable.

Suicide Risk Triage Support Model, Province of Jujuy, Argentina Jun. 2026 – Present
Research project *with Daniel M. Low, PhD*

– Built an interpretable model that suggests the suicide-risk level (low/medium/high) clinicians assign under a provincial protocol, from 1,468 labeled episodes, with a leakage audit and patient-grouped splits.
– Compared 8 classifiers (macro-F1 $\approx$ 0.45 vs. 0.33 chance); a cost-sensitive decision rule cut severe misses (high risk predicted as low) from 24 to 0; audited performance by sex and region.
– Coded clinicians' free-text notes against a Spanish adaptation of the Suicide Risk Lexicon with *llm_tracker*.

M.Sc. Thesis Research, Compositional Controller Synthesis 2024 – 2026
University of Buenos Aires (UBA) *Advisors: S. Uchitel and H. Gagliardi*

- Replaced the bottleneck minimization step of compositional controller synthesis (WSOE) with branching bisimilarity, proving the conditions under which the replacement is sound.
- Implemented it in MTSA and validated it on 2,212 real instances: under 1,000 ms on the largest ones (vs. 7,600 ms for WSOE), with the same reduction in 83% of cases.

Teaching

Graduate Teaching Assistant, Operating Systems Mar. 2025 – Present
University of Buenos Aires (UBA), B.Sc. in Computer Science

- Teach lab sessions, design and grade assignments, and mentor undergraduate students.

Industry Experience

Brubank (digital bank) — Senior Backend Engineer Sep. 2025 – Present

- Build services and data pipelines that handle sensitive financial data under regulatory constraints.

Modak (fintech startup) — Backend Engineer Dec. 2023 – Sep. 2025

- Led projects end to end and built the company's AWS cloud infrastructure from scratch.

Mercado Libre — Backend Developer Mar. 2021 – Dec. 2023

- Built high-throughput services, image-processing pipelines and internal libraries.

Awards & Service

Outstanding Delegate(s), NPT Committee — NMUN New York Apr. 2026

- Represented the Syrian Arab Republic for the University of Buenos Aires; awarded jointly with a fellow delegate.

Speaker — JIS Go Live, Hospital Italiano de Buenos Aires 2020

- Presented *Iuvo*, an app designed to improve healthcare services for older adults.

Chicas en Tecnología — PUMM Program 2017 – Present

- Member of a community that promotes access to technology for young women in Latin America.

Skills

Methods	Natural language processing, LLM-based text coding, machine learning, statistical analysis, formal methods (controller synthesis, behavioural equivalences)
Research tools	Python (pandas, NumPy, scikit-learn, PyTorch, Hugging Face, spaCy, OpenAI and Anthropic APIs), R, SQL, LaTeX, Git
Engineering	Go, Java; distributed backend systems, data pipelines, AWS, PostgreSQL
Languages	Spanish (native); English (advanced, Cambridge First Certificate; IELTS in progress); Hebrew (basic)

References

Daniel M. Low, PhD
Research Scientist, DAIR, Child Mind Institute; Visiting Scholar, Dept. of Psychology, Harvard University
Research advisor, ARC Lab

Sebastián Uchitel, PhD
Professor, Dept. of Computer Science, UBA; Senior Researcher, CONICET (ICC)
M.Sc. thesis advisor

Diego Fernández Slezak, PhD
Professor, Dept. of Computer Science, UBA; Independent Researcher, CONICET (ICC)
Professor of the Operating Systems course I teach in