

Karl Vilhelmsson Emneby

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Technical: Python (PyTorch, scikit-learn), Julia

Languages: Swedish and English (fluent), Chinese and Italian (semi-fluent), Spanish (advanced)

PUBLICATIONS

Pretty Linear Liars. K. Vilhelmsson Emneby, J. Yocum, C. Allen. *Under review*, NeurIPS 2026 InterpScience Workshop. 2026

Acknowledged in “**Adaptive Parallel Reasoning**” (Xie & Lian, 2026) 2026

RESEARCH EXPERIENCE

Interpretability Researcher, CHAI / Berkeley AI Research Berkeley, CA
Cameron Allen & Julian Yocum (supervisors) | CHAI Summer Internship (selected), Jul–Oct 2026 Sep 2025 – Oct 2026

- Theoretically predicted and experimentally confirmed across two testbeds that unregularized probes latch onto near-silent directions the model ignores. Also showed that tuning regularization by causal effect, not merely decoding accuracy, is powerful for finding causally faithful features.
- First-authored the paper above. Second write-up will be released late Sep / early Oct 2026

Researcher, SLAC National Accelerator Laboratory Stanford, CA
MiniBooNE group | Professor Hirohisa Tanaka (supervisor) Jan 2025 – Aug 2025

- Built a machine learning pipeline to reanalyze an unexplained anomaly in the MiniBooNE neutrino experiment, testing whether it survives methods beyond the standard likelihood and decision-tree analyses

Researcher, Mu2e Experiment Berkeley, CA
Berkeley Physics Department | Professor Yuri Kolomensky (supervisor) Jun 2023 – Jan 2025

- Used Bayesian analysis in Julia to search for a forbidden muon-to-positron decay, modeling the backgrounds that mimic the signal. Also built detector hardware for the experiment at Fermilab

EDUCATION

UC Berkeley Berkeley, CA
BA Physics, with Distinction | GPA 3.910 / 4.000 Aug 2022 – May 2026

Kungsholmens Gymnasium Stockholm, Sweden
Natural Science Program | GPA 4.000 / 4.000, co-valedictorian Aug 2018 – May 2021

AWARDS AND SCHOLARSHIPS

EGE Foundation Scholarship, awarded twice USD 25,000 each, 2024 and 2025
Sweden’s most competitive undergraduate scholarship. One of 7 awarded in 2024, and one of a few dozen ever to receive it twice.

Eleven additional merit scholarships 2020 – 2025
Carl Erik Levin (x2), Gustaf Söderberg (x3), KG (x2), AAA Foundation, Lindhes, Anna Whitlock, Berzelius.

PROJECTS AND OTHER EXPERIENCE

Creator, hittastipendier.se 2025 – present
• Built and shipped a Swedish scholarship database. 7,250 unique visitors as of Sep 2026

Creator, MotDrömmen (Toward the Dream) Sweden and California
Podcast and school presentations Jun 2023 – Jan 2024
• Interviewed 15 Scandinavians at top U.S. universities, then presented the findings at high schools across Sweden

Intern, Tweenvest Berkeley, CA
Consumer investing startup Aug 2023 – Dec 2023
• Ran hundreds of user interviews to shape a stock-picking product for Spanish-speaking markets. Company reached USD 26,390 MRR during my time there

Guest on “**瞎扯学中文 / Convo Chinese**”, on language learning, [in Chinese](#) 2025