

# Kristian Praizner

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## Education

**Massachusetts Institute of Technology (MIT)**

*September 2022 - May 2026*

**Degree:**

*Cambridge, MA*

Bachelor of Science in Artificial Intelligence & Decision Making

**GPA:** 4.5/5.0

**Select Technical Coursework:** Natural Language Processing, Algorithms & Data Structures, Machine Learning, Computational Cognitive Science, Robotic Manipulation, Linear Algebra, Signal Processing, Computer Graphics

**Activities:** Track & Field (All American), Buddhist Society, Sundai Club

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## Skills

**Programming:** Python, C++, C, Rust, TypeScript, WebPPL, HTML, CSS

**AI/ML:** PyTorch, scikit-learn, Sentence-BERT, OpenAI API, LLM evals, retrieval

**Systems:** Linux, FastAPI, asyncio, libp2p, Electron, PyInstaller

**Data:** NumPy, SciPy, pandas, Matplotlib, SQL

**Languages:** Estonian (native), English (native)

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## Work Experience

**SINTEF - Summer Intern**

June 2025 - August 2025

- Built production-style Python pipelines for ingesting, denoising, and visualizing multimodal drone sensor data for UXO detection.
- Evaluated magnetometer, GPR, gamma-ray, and imaging payloads to improve detection performance and operational decision support.
- Packaged the end-to-end toolchain into a distributable desktop software suite with PyInstaller for researcher use.

**MIT Decentralized Currency Initiative - Research Engineer**

January 2025 - Current

- Built Python APIs and data pipelines for Bitcoin mempool and hashrate research, supporting empirical modeling of transaction fees and network dynamics.
- Developed ML-based fee estimation workflows on node-collected transaction data, including feature engineering, evaluation, and visualization for large-scale blockchain datasets.
- Translated research ideas into usable internal tools and web-facing demos for simulation and analysis.

**CERN - Summer Intern**

June 2024 - August 2024

- Developed simulations for the W-boson mass measurement for future particle colliders.
- Utilized in-house computer clusters with C++ and ROOT to run and graph monte carlo simulations and optimization techniques.
- Contributed to a key measurement technique for future colliders, enhancing the precision of W mass measurement by 40%. Presented work in a national physics conference.

**Domino's Pizza - Assistant Manager**

September 2019 - May 2022

- Navigated through time pressured environments in every part of the pizza-making process.
- Worked through the Covid-19 pandemic as an essential worker.

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## AI & Systems Projects

### **RLM - Recursive Language Models** - *Python, OpenRouter API, Sentence-BERT*

- Built a modular framework for long-context LLM agents with swappable partitioning, retrieval, and execution strategies.
- Designed an ablation/evaluation harness to compare accuracy, latency, and token cost across configurations on OOLONG and LoCoDiff.
- Implemented async parallel recursion and structured answer stitching to improve wall-clock performance in multi-stage LLM pipelines.
- Open-sourced at <https://github.com/Krisp140/recursive-llm>

### **AIA - Agentic Communication Protocol** - *Libp2p (Go), Typescript*

- Built a decentralized communication protocol for AI agents on libp2p, including message-passing and coordination primitives for multi-agent workflows.
- Developed a TypeScript/React/Electron interface to visualize and interact with agent communications.
- Won Gold Prize in MIT AI Venture Studio.
- <https://aiainterface.com>

### **Bitcoin Fee Estimation** - *Python, SQLite, scikit-learn, XGBoost, Linux*

- Built a Python-based Bitcoin fee estimation pipeline integrating Bitcoin Core RPC data, a custom mempool tracker, and external validation feeds to model transaction fees across 11M+ mempool observations.
- Developed a two-stage structural model separating confirmation-delay technology from user fee preferences using VCG-inspired economic modeling.
- Engineered SQLite ETL workflows to merge external block data, corrected transaction weights/fees, CFPF/RBF features, and block-level fee statistics.

### **AI Assisted Fruit-Sorting Bot** - *Python (Drake), PyTorch*

- Developed full-stack robot simulation to identify, grasp, move, and sort fruit in a factory setting.
- Vision system utilized a Mask-RCNN model to identify the fruits with a 93% success rate despite limited training data and only one camera system.
- Presented video work and formal write-up at a robotics conference.

### **Multimodal AI Support Agent** | *Next.js, TypeScript, Claude API, Vercel AI SDK, PostgreSQL*

- Built a streaming AI agent that orchestrates Zod-validated tools with a multistep reasoning loop, enforcing numeric accuracy over LLM hallucination for domain-specific lookups
- Designed a streaming XML parser that segments LLM responses into text and rich artifacts in real time.
- Implemented sandboxed React artifact execution using iframe isolation with runtime Babel transpilation, import remapping to UMD globals, and postMessage-based dynamic height synchronization.
- Engineered a full-context injection strategy with prompt caching over RAG, eliminating retrieval errors for a bounded knowledge domain while keeping latency under 60s

### **Lisp Interpreter** - *Python*

- Developed tokenization and parsing functions for a dialect of the Lisp language and python functions to evaluate Lisp inputs
- Programmed Python functions to declare and enclose Lisp environments, use booleans and conditionals in Lisp, and implement lists in Lisp using the linked list data structure.