

JONATHAN POPHAM

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SUMMARY

Full-stack engineer with expertise in code analysis systems, graph algorithms, and LLM integration. Core contributor to Supermodel's code intelligence platform, designing call graph generation, domain classification, and real-time graph update systems. Mathematics background in abstract algebra, real analysis, and mathematical modeling.

TECHNICAL SKILLS

Languages: TypeScript, Python, Java, JavaScript, Cypher | **Backend:** Node.js, Express, Spring Boot | **Frontend:** React, VS Code Extensions, Electron
Data/ML: Neo4j, Graph Algorithms (Louvain), LLM APIs (OpenRouter, Anthropic, Cerebras), Pandas | **Infrastructure:** Docker, Azure, Terraform, GitHub Actions | **Tools:** Tree-sitter, MCP, Prompt Engineering

EXPERIENCE

Founding Engineer | Supermodel

January 2025 – Present | supermodel.software | github.com/supermodeltools

Building an AI-powered code intelligence platform generating architectural views from source code. ~360 commits across core platform and public API.

Call Graph System

- Designed cross-file function call resolution for TypeScript, Python, Java, Go with import resolution for bare imports, dotted paths, extension inference

Domain Classification Engine

- Architected LLM-based classification with structured outputs and smart sampling; implemented Louvain community detection; integrated Cerebras, OpenRouter/Gemini with fallback handling

Real-time Graph Updates

- Built progressive update system incrementally updating graphs on file changes; reduced full-repo reprocessing by propagating only affected nodes

Developer Experience

- Built MCP integration for Claude Code; created VS Code declarative view system

Data Automation Engineer | ACI Seeds

2024 | aciseeds.com

- Built Python/Pandas pipeline for gas chromatograph results—reduced processing from 4 hours to 15 minutes per 200-page report (16x improvement)
- Scaled lab from 2 reports/day to full annual volume (~100 runs); automated oleic/linoleic acid ratio extraction with validation

AI Math Trainer | Outlier

2024

- Designed adversarial math problems across multiple subjects to identify LLM weaknesses
- Created training data teaching models to solve problems they initially failed
- Contributed to reinforcement learning from human feedback (RLHF) pipelines

Frontend Engineer | Various Startups

2014 – 2020

- Developed web applications using React, Angular, vanilla JS; built interactive data visualizations across HR tech and industrial software

EDUCATION

B.S. Mathematics | Indiana University | 2022–2024 — Abstract Algebra, Real Analysis, Probability, Statistics, Mathematical Modeling, Differential Equations

A.S. Computer Science | Georgia State University | 2020–2022

PROJECTS & OPEN SOURCE

Ghostie — AI personality system for terminal with knowledge graph memory | **Gas Experiment** — Multi-agent playground for AI coordination
supermodeltools/Supermodel — Code intelligence platform (327 commits) | **supermodeltools/supermodel-public-api** — Public API layer (32 commits)