

# Jacob (Jack) Goetzmann

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## EDUCATION

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### The University of Chicago

Expected Jun 2029

- **Bachelor of Science in** Computer Science; **Bachelor of Arts** in Media Arts and Design
- Computational Life Sciences Career Cohort
- Relevant Coursework: Systems Programming I-II, Introduction to Proofs in Analysis, Abstract Linear Algebra

## SKILLS

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- **Programming Languages:** C, C++, Python, Java, JavaScript, TypeScript, HTML/CSS, Lua, SQL
- **Frameworks & Libraries:** React, Next.js, Node.js, PyTorch, Tailwind, NumPy, Pandas, Matplotlib, SciPy
- **Tools & Methodologies:** Git/GitHub, Vercel, PostgreSQL, Data Visualization, Data Analysis, Machine Learning

## EXPERIENCE

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### Full Stack Developer

Apr 2026 – Present

Thrice Agency

- Design and ship Next.js apps and custom Slack/Microsoft Teams plugins for client marketing teams, wrapping LLM APIs to automate content generation, campaign reporting, and recurring ops.
- Wire client tools (CRMs, analytics, scheduling) into unified backends, replacing 60% of manual workflows.

### Software Engineering Intern ~ [Incoming Summer 2026]

Summer 2026

Top Marks Prep

- Building a full-stack analytics dashboard on a PostgreSQL database of 100+ tutoring sessions, translating raw session data into actionable insights for tutors on student progress, engagement signals, and recommended interventions.

### Product Development Intern ~ [Incoming Summer 2026]

Summer 2026

Bright Bots Initiative

- Deploying React-based educational games for primary school students, contributing game logic, UI, and interactive systems.

### Frontend Developer

Feb 2025 – Present

University of Chicago Recognized Student Organizations

- Build and maintain websites for neXus Dance Collective and UChicago Credit Group in React/Next.js (deployed on Vercel), and a GitHub Pages site for UChicago Geographical Studies, serving 200+ members across events, member portals, and outreach.
- Hold dual roles as Event Director (neXus) and Design Lead (Geographical Studies) alongside engineering responsibilities.

### Frontend Developer

Aug 2025 – May 2026

Genehackers

- Designed and shipped a React-based competition site for UChicago's Genehackers iGEM synthetic biology team, creating 10+ deliverable pages for the 2025 international Genetically Engineered Machine competition, contributing to a gold medal finish.

### Software Intern

Aug 2025 – Sep 2025

Excella Group

- Developed a full-stack web platform for a new culinary education initiative, integrating responsive front-end interfaces with secure back-end systems to manage data storage, appointment scheduling, and tiered administrative access.
- Designed 23 interactive cooking lessons using AI tools, enhancing personalization and student engagement.

## TECHNICAL PROJECTS

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### Novel Numeric Integration Methods

Summer 2025 | [GitHub](#)

- Built an ML pipeline to generate and evaluate novel Runge–Kutta integration methods, combining gradient descent and evolutionary optimization on CUDA-accelerated infrastructure and benchmarking 10,000+ stiff and non-stiff ODEs against RK4, RK45, and Gauss–Legendre solvers.
- Confirmed mathematical optimality of classical RK4 and Dormand–Prince, while exposing gradient descent's local minima failures and demonstrating evolution's ability to rediscover global optima.
- Revealed that novelty-driven methods can produce structurally distinct integration schemes, but with severe accuracy trade-offs—highlighting the tension between discovering novel methods and preserving numerical performance.

### NSE Options Valuation & Backtesting

Summer 2025 | [GitHub](#)

- Built a Python toolkit to scrape NSE option-chain data and perform Black–Scholes valuations with full Greeks.
- Designed an ML-driven backtesting framework with multiple execution modes and evaluation using Sharpe and Sortino.

**Interests:** Rock Climbing, Creative Writing, Dance, Board Games, Eating Yummy, Yummy Fruit