

KONSTANTIN SAVKIN

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EDUCATION

Oregon State University, Corvallis, OR

Bachelor of Science in Computer Science | GPA: 3.97/4.0

Expected Graduation: June 2028

TECHNICAL SKILLS

Languages: Python, SQL, C#, JavaScript, C++, TypeScript

Backend & APIs: Flask, SQLAlchemy, RESTful APIs, JWT, bcrypt, SSE (Server-Sent Events), aiohttp

Databases: SQLite, PostgreSQL, Database Design, Query Optimization

Machine Learning: TensorFlow, PyTorch, ResNet-50, YOLO, Computer Vision, Image Classification, Pandas, NumPy

Data Analysis: Pandas, NumPy, Data Visualization, Statistical Analysis, Market Data Processing

Tools & Technologies: Git, Docker, Jupyter Notebooks, API Integration, Real-time Systems

HACKATHON ACHIEVEMENT

QuackHacks 2025 Hackathon - 3rd Place Winner (3rd out of 112 participants)

PolyDebate Project | November 2025

github.com/ksavkin/polydebate | devpost.com/software/polydebate

AI-powered debate platform integrating Polymarket prediction markets with real-time AI debates and text-to-speech narration

My Contributions (Backend & API Integration):

- Demonstrated understanding of prediction market mechanics including probability aggregation, market resolution, and information discovery through distributed consensus
- Engineered Flask backend with SQLAlchemy ORM, implementing 8-table database schema and 15+ RESTful API endpoints
- Integrated Polymarket Gamma API to fetch live prediction market data across Politics, Sports, Crypto, Finance, and Science categories
- Architected real-time debate system using Server-Sent Events (SSE) for live streaming of AI-generated arguments
- Implemented external API integrations: Polymarket (market data), OpenRouter (100+ AI models), and ElevenLabs (TTS)
- Developed JWT-based authentication system with bcrypt password hashing and email verification
- Optimized cost efficiency by filtering AI models to ≤\$0.5 per 1M tokens and prioritizing free models
- Delivered fully functional full-stack application in 24-hour development sprint from concept to deployment
- Technologies: Python, Flask, SQLAlchemy, SQLite, Polymarket Gamma API, OpenRouter API, ElevenLabs API, JWT, SSE

EXPERIENCE

Laboratory Assistant - Warren Lab

Oregon State University, Corvallis, OR | February 2025 - Present

ResNet-50 Classification Model:

- Engineered ResNet-50 deep learning model achieving 98.24% test accuracy on 3-class biological specimen classification
- Developed custom training pipeline with data augmentation (rotation, flipping, color jittering, contrast adjustment) on 850+ image dataset
- Applied advanced tiling techniques for fine-grained feature detection in microscopic image analysis

- Improved model accuracy from initial baseline to 93% through systematic hyperparameter tuning and architecture optimization
- Curated balanced dataset (~450 samples per class) ensuring robust model generalization across morphological variations
- Authored technical report documenting ResNet architecture, training methodology, and evaluation metrics

Detection Model Project:

- Annotated 1,000+ images across 3 classes for object detection model training
- Automated labeling pipeline using detection model, achieving 99.6% time reduction (20s to 74ms per image)
- Implemented YOLO-based detection model for automated biological specimen identification

Trajectory Tracking & Behavioral Analysis System:

- Developed real-time trajectory tracking system for behavioral analysis of biological specimens during movement
- Implemented computer vision pipeline to classify specimens and visualize movement paths with color-coded trajectories
- Created automated visualization tool that tracks spatial coordinates and renders continuous movement patterns
- Enhanced research workflow by enabling simultaneous classification and spatial-temporal behavioral analysis

BeeMachine Parser:

- Designed and implemented Python parser to process large-scale ML datasets (10,000+ annotated samples)
- Automated error analysis workflow, reducing manual review time by 85% through misclassification flagging system
- Built data validation pipeline that identified and flagged 200+ labeling inconsistencies for model retraining
- Reduced dataset processing time from 4+ hours to 8 minutes (99.6% reduction) through automated pipeline

HIGH SCHOOL PROJECTS

Universities Database Project | February 2024

github.com/ksavkin/universities_db_project

- Designed 8-table normalized relational database for university information management
- Implemented 12 advanced SQL queries demonstrating CTEs, window functions, JOINS, and transactions
- Technologies: SQL, SQLite, dbdiagram, DBeaver

Blind Chess Player | April 2021

github.com/ksavkin/blind_chess_player

- Developed blindfold chess training application with dual-interface: Telegram Bot and Yandex Station voice commands
- Implemented chess engine with move validation, hint system, and board visualization
- Integrated Telegram Bot API and Yandex Voice API for seamless voice-controlled gameplay
- Technologies: Python, Telegram Bot API, Yandex Voice API, Chess Engine

ADDITIONAL INFORMATION

Seeking: Summer 2026 Backend Engineering Internship (open to ML/AI Engineering or Data Engineering roles)

Interests: Prediction markets and information aggregation mechanisms, decentralized finance applications, AI-powered decision systems, real-time data platforms, blockchain-based data systems, API design, cost-optimized ML solutions

Availability: Available May 2026 - August 2026