

Jae Birdsall

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EDUCATION

The Pennsylvania State University
College of Engineering
Bachelor of Science in Computer Science

University Park, PA
May 2026
GPA 3.4

SKILLS

Languages: Python, Typescript, Javascript, SQL, Java, HTML/CSS

Frameworks: React.js, Next.js, Node.js, Express.js, Flask, Bootstrap, Tailwind CSS

Libraries: PyTorch, TensorFlow, Scikit-Learn, Pandas, NumPy, Plotly

Developer Tools: AWS, GCP, Git, Docker, MongoDB, MySQL, Linux, Jira, GitLab

EXPERIENCE

Human Technology Interaction Lab

Machine Learning Research Assistant

State College, PA
May 2025 - Present

- Train **computer vision models** for collision and obstacle detection on 50,000+ traffic images **achieving 92% accuracy**
- Optimize **TensorFlow data pipelines** with caching, prefetching, and mixed precision, cutting model training time by 40%
- **Deploy computer vision models** to edge devices with **TensorFlow Lite**, enabling real-time inference with **30ms latency**
- Compile 20+ technical and procedural documents into a comprehensive onboarding guide for incoming research assistants

JiaYou Tennis

Software Engineer

Seattle, WA
Apr 2025 - Aug 2025

- Developed immersive **augmented reality tennis trainer** for Snapchat Spectacles with **Typescript** and **Lens Studio SDK**
- **Managed Agile development team** of 4 engineers, organizing sprints and tasks to **deliver 94% of milestones** on schedule
- Implemented predictive trajectory model with **physics simulation and computer vision** enabling anticipatory swing guidance
- Collaborated with creative director to translate technical features into compelling presentations for investors and competitions

Albany Upstate Accounting & Tax

Web Development Intern

Albany, NY
May 2024 - Aug 2024

- Built client service platform with encrypted file management and automated billing leveraging **AWS S3 and Amplify**
- **Presented 5+ UI/UX prototypes** to clients in Figma, iterating on feedback to **reduce development time by 2+ sprints**
- Designed two-tier security model with **Docker containers**, separating sensitive client data from application logic
- Developed **Express API** for zero-knowledge encrypted file access, ensuring compliance and traceable audit records

Mindburn Solutions

Support Technician

Harrisburg, PA
July 2021 - Aug 2023

- Designed visual report system for **MySQL database**, generating charts and graphs that helped inform team decisions
- Supported disaster recovery for multiple companies, **preserving 100,000+ customer records** after security breaches
- Configured **secure network environments** and server deployments for **5+ enterprise clients** including Amazon facilities

PROJECTS

Review Sentiment Analysis Model | Python, Flask, PyTorch, Scikit-Learn, NumPy, Pandas

github.com/jaeminbird/RSAM

- Created automated data pipeline processing **1,500+ professor reviews** with **Pandas** data processing and **BeautifulSoup**
- Fine-tuned **dual ML models** achieving **91% accuracy** using **PyTorch** and **DistilBERT** for comparative performance analysis
- Deployed interactive **Flask** dashboard with **Plotly** visualizations enabling real-time filtering and analysis on **70+ metrics**

Timely (HackPSU Entry) | React, Next.js, OpenAI API, GCP, MongoDB

github.com/jaeminbird/Timely

- Pitched and developed AI calendar assistant, leveraging **GPT-4o** and **Calendar APIs** to turn conversations into schedules
- Designed efficient **MongoDB database**, supporting **200+ chats** across **30+ concurrent users** with **150ms response times**
- Secured **user authentication** with OAuth 2.0 and **Google Cloud Platform** to protect conversation and session privacy

LEADERSHIP

Korean Student Association

President

University Park, PA
May 2024 - Present

- Lead diverse team of 12 board members, coordinating cultural events and educational programs for **300+ students**
- **Negotiate 10+ sponsor deals** for **500+ attendee cultural showcase**, securing **\$8,000+** through local business partnerships

Asian Student Association

President

University Park, PA
Apr 2023 - May 2025

- Developed multi-org partnerships with 5 student groups, generating **\$5,700+ through collaborative fundraising**
- Drove membership growth by 27% to **325+ active members** through targeted outreach and social media campaign