RYLAND BIRCHMEIER

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EDUCATION

University of Virginia (Junior / 3rd Year), Charlottesville, VA

[Major] Computer Science (BS)// [Minors] Entrepreneurship (McIntire), Data Science   *August 2022 - May 2026*

- ❖ GPA: 4.0/4.0, Rodman Scholar (Top 5% Engineering School), Dean's List All Semesters.
- ❖ Courses Taken: Linear Algebra, Multivariable Calculus, Algorithms I & II, Computer Architecture I, Probability, Discrete Mathematics I, Software Development Essentials, Intro Entrepreneurship, Advanced Software Development, Ordinary Differential Equations, Managing Innovation.
- ❖ Courses Taking Fall 2024: Machine Learning, Intro Cybersecurity, Computer Architecture II, Entrepreneurship, Entrepreneurship Capstone.

The Bishop's School, San Diego, CA

High School   *August 2018 - May 2022*

- ❖ Cum Laude, Upper School Science Award Recipient, Knight's Award, GPA: 3.99/4.0 (4.7/5.0), ACT: 35/36.

ACADEMIC ACHIEVEMENTS / AWARDS

1st Place - UVA 2024 Hackathon, Charlottesville, VA   *March 2024*

- ❖ Won UVA Hackathon Art & Gaming category in the most competitive year to date (750+ participants across all HooHacks).
- ❖ Utilized PyGame, Next.js, and dynamic programming algorithms to create an interactive teacher projected onto a real piano.

Top 5/100+ - Meta & UVA Systems Data Science Case Competition, Charlottesville, VA   *November 2023 – December 2023*

- ❖ Placed top 5 out of 100+ teams registered in the first ever Meta sponsored UVA data science case competition.
- ❖ Performed analysis with Scikit-Learn K-means & t-SNE, LLM semantic grouping, Matplotlib, and Gephi graph visualization.

PROFESSIONAL EXPERIENCE

IBM Accelerate 2024, Virtual

Software Developer Track   *June 2024 - July 2024*

- ❖ Accepted for Summer 2024 (5% acceptance rate) with emphasis on React, GenAI implementation, and cloud native dev.
- ❖ Attended two sessions per week with current IBM engineers to improve industry software development skills.

Allianz Partners, Richmond, Virginia

Project Management & Innovation (PM&I) Intern   *June 2024 - August 2024*

- ❖ Understood and improved critical tasks within the PM&I team at Allianz and enhanced efficiency through technical innovation.
- ❖ Focused on exploring 10 use cases for LLMs and multimodal embedding models and implemented them into workflows.
- ❖ Crafted 3 software prototypes and presented findings in focused PowerPoint presentations to 20+ Allianz executives.

Vexcel Imaging (Microsoft spin-off), Madrid, Spain

AI / Machine Learning Intern   *May 2023 - July 2023*

- ❖ Engineered >95% accurate PyTorch CNN classifiers and fine-tuned custom, photo-realistic, latent diffusion models (sd-v1-5), assisting in high-accuracy image classification and novel text-to-image creation/text-guided image inpainting.

PROJECTS / ACTIVITIES

UVA Autonomous Racing, Charlottesville, VA

Perception & Computer Vision Team   *April 2024 - Present*

- ❖ Active member of the UVA Autonomous Racing Perception Team, working on adding new modalities and improving quality.

www.audoly.com, Online

Creator & Developer   *May 2024 - Present*

- ❖ Utilized Next.js, Tailwind CSS, shadcn/ui, AWS CDK, and Stripe to build a Spotify data aggregation SaaS product for artists.

Midnight Chat App, Online

Creator & Developer   *July 2024 - Present*

- ❖ Used Expo React Native + Firebase to build & publish a fully functional iOS Chat App with independent message delete times.

TECHNICAL SKILLS

Core Programming & Frontend: Java (Oracle Certified Associate), Python, C, JavaScript & TypeScript, HTML, CSS, Tailwind CSS, React.js, Next.js 13+ App Router, Redux, React Native, SQL.

Backend: AWS (CDK, S3, EC2, Lambda, DynamoDB, Route 53, API GW, EventBridge, IAM), GCP (Firebase, Firestore, Cloud Functions, GKE, Cloud SQL, Vision, Compute Engine), Django, Docker, Docker Compose, Flask, PostgreSQL, REST APIs.

AI & Data Science: PyTorch/TensorFlow (intermediate), Scikit-Learn, CNNs (ResNet, YOLO), Stable Diffusion Fine-Tuning, OpenCV, Pandas, Vector Databases, Web Scraping, Weights and Biases (W&B), Gephi (network visualization), Matplotlib.

Misc: Git, GitHub Workflow, Ubuntu (desktop, server), FDM 3D Printing (Prusa, Creality), Fusion 360, Figma, Stripe.