David Barron

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EDUCATION

- **Virginia Tech University** — Blacksburg, VA
  Master of Science in Computer Science; GPA: 3.9 — *Jan. 2025 – current*

- **Virginia Tech University** — Blacksburg, VA
  Bachelor of Science in Business Information Technology GPA: 3.6 — *Aug. 2020 – July. 2024*

EXPERIENCE

- **Virginia Tech University** — Blacksburg, VA
  Research Assistant — *Oct 2024 - Present*
  - **Sophia**:
    Developed a multimodal AI tutoring system using dynamic concept mapping to identify and remediate student misconceptions in data structures, achieving 3.95/5.0 satisfaction across 70+ students.
  - **Dynamite**:
    Developed a real-time discussion platform that automatically generates bullet-point summaries from live student conversations, deployed to facilitate class discussions for over 100 students.

- **Pearson** — Remote
  Cloud Engineer Intern — *May 2023 - Oct 2023*
  - **Cost Optimization**: Implemented cost-saving initiatives within Pearson's infrastructure that saved the company more than $200,000 by the completion of the internship.
  - **Infrastructure as Code & CI/CD**: Leveraged Terraform for Azure infrastructure creation and modification, and Ansible workflows via AWX for configuration management across Azure resources, implementing CI/CD pipelines through Git and AzureDevOps.
  - **Container Orchestration**: Managed and deployed clusters using Kubernetes.

- **Premier Inc.** — Remote
  Information Security Intern — *May 2022 - Oct 2023*
  - **Cloud Security**: Collaborated with the Cloud Security Team to assess and implement changes within their cloud architecture.
  - **Insider Risk Management**: Performed Insider Risk Management by drafting policies, analyzing alerts, and escalating relevant alerts through Microsoft IRM.
  - **Active Directory Management**: Contributed to Active Directory Cleanup by generating reports using PowerShell and Excel and making appropriate modifications to Active Directory based on the report findings.

- **Triple Point Security** — Blacksburg, Virginia
  Cybersecurity Intern — *May 2022 - Oct 2022*
  - **Security Awareness**: Designed and helped implement successful phishing campaigns to educate clients on security awareness.
  - **Cloud Architecture**: Configured cloud resources and designed secure architecture in AWS and Azure.
  - **Vulnerability Assessment**: Performed network and agent vulnerability scanning using Nmap and OpenVAS.

PROJECTS

- **Juno**: Developed a Chrome extension enabling voice-based interaction with configurable LLM agents via keyboard shortcuts, with extended capabilities through external tool integration.
- **PlotPact**: Built an AI-powered interactive storytelling platform that generates creative writing constraints to boost user creativity.

PUBLICATIONS

- **Dynamite: Real-Time Debriefing Slide Authoring through AI-Enhanced Multimodal Interaction**: Panayu Keelawat, **David Barron**, Kaushik Narasimhan, Daniel Manesh, Xiaohang Tang, Xi Chen, Sang Won Lee, and Yan Chen. *arXiv preprint arXiv:2507.20137*, 2025.

PROGRAMMING SKILLS

- **Languages**: TypeScript, Python, SQL, Bash   **Technologies**: Next.js, React, Supabase, Git