Ethan Ryan

EDUCATION

- **University of Colorado, Denver** — Bachelor of Science, Physics
  Denver, CO; Received May 2025 — *Summa Cum Laude*
  Undergraduate Thesis
  Electron-Impact Excitation and Ionization of Rb Using the Dirac B-Spline R-Matrix Method.

- **Red Rocks Community College** — Associate of Science, Physics
  Lakewood, CO; Received August 2022

RESEARCH

- **University of Colorado Denver**: The following research was conducted under the advisor of the Atomic, Molecular, and Optical Physics research group, Dr. Kathryn Hamilton. The results of this research accurately modeled the electron collision cross-sections and excitation energies of Rubidium and the Rubidium+ ion. I accomplished through the utilization of High Performance Computing (HPC) via The Texas Advanced Computing Center at the University of Texas and the DBSR computational fortran95 repository which can be found here: https://github.com/jagot/bsr. My contribution to this research has validated a theoretical model for atomic cross section collisions of Rubidium when compared with NIST values. This research could continue through to a paper for experimental plasma research. This topic was the focus of my **senior thesis**.

PRESENTATIONS

- **Research and Creative Activities Symposium** — University of Colorado, Denver
  Modelling Electron Collisions with Rubidium Atoms — *04/29/2025*
  Co-Authors:
  Dr. Axel Molle (KU Leuven), Jon Grumer (Uppsala University), Klaus Bartschat (Drake University), Kathryn R. Hamilton (University of Colorado Denver).

- **Division of Atomic, Molecular and Optical Physics** — Fort Worth, TX
  Electron-Impact Excitation and Ionization of Rb and Rb+ — *06/04/2024*
  Co-Authors:
  Dr. Axel Molle (KU Leuven), Jon Grumer (Uppsala University), Klaus Bartschat (Drake University), Kathryn R. Hamilton (University of Colorado Denver).

- **Research and Creative Activities Symposium** — University of Colorado, Denver
  Modelling Electron Collisions with Rubidium Atoms — *04/29/2024*
  Co-Authors:
  Dr. Axel Molle (KU Leuven), Jon Grumer (Uppsala University), Klaus Bartschat (Drake University), Kathryn R. Hamilton (University of Colorado Denver).

TEACHING EXPERIENCE

- **Survival Skills Instructor, Avid4 Adventure**: From May - August 2023 I taught different groups of 6-10 year old children each week. Size of groups were, on average, 13 children. Skills included fire making, shelter building, plant/animal identification and more.

- **Team Lead, RRCC**: RRCCIT would give college credit to high school students working an internship with the department. I would lead these students and teach them networking/system topologies, troubleshooting skills, and the different technologies on campus.

- **Solutions Engineer, TrinWare**: Held seminars to teach specific technologies to different business groups. For example, presenting and teaching various Microsoft Office 365 products.

Profssional Experience

University of Colorado Denver   Denver, CO
Computational Atomic, Molecular, and Optical Physics Lab Research Assistant   *May 2024 - May 2025*

- **Data Collection**:
  - Submitted jobs to the supercomputer at the Texas Advanced Compute Center (TACC).
  - Used git to clone the DBSR repository for running the excitation experiment.

- **Data Analysis**:
  - Collected the electron-volt (ev) values produced from experiment and compared with NIST values.
  - Graphed the theoretical cross sectional area vs electron volt values to compare with experimental data.

- **Literature Review**:
  - Reviewed literature of similar experiments and mathematical methodologies.

Community College of Aurora   Aurora, CO
Systems Administrator   *Aug 2023 - Aug 2024*

- **Server Administration**:
  - Installed, configured, and managed Windows Server and Linux distributions (e.g., Ubuntu, Rocky).
  - Implemented Active Directory services including user/group management and Group Policy Objects (GPOs).
  - Managed virtualization platforms (e.g., vSphere, Proxmox, VDI) for server consolidation and resource optimization.

- **Backup and Recovery**:
  - Implemented backup strategies using tools such as Veeam Backup/Replication and Windows Server Backup.
  - Developed disaster recovery plans and conducted regular backup testing to ensure data integrity and availability.

- **System Monitoring and Performance Tuning**:
  - Implemented monitoring tools (e.g., SolarWinds, Auvik) to track system performance, network traffic, and resource utilization.
  - Analyzed performance metrics and identified areas for optimization, such as memory usage, CPU load, and disk I/O.
  - Tuned system configurations and applied optimizations to improve overall system responsiveness and stability.

- **Cloud Administration**:
  - Administer AAD/Entra users, groups, devices, and participated in migration to Azure through AD Connect.
  - Experienced in deployment of Azure services such as VM's along with load balancers, availability sets, virtual networks, network security groups.
  - Managed devices, users, email, teams, and other applications through the O365 Admin Portal(s) (e.g., Teams, Intune, Entra).

- **IT Management**:
  - Facilitated the successful oversight of 4 major projects that increased department IT operational efficiency including Intune, Asset Management, DR testing, and new data center design.
  - Was the point of contact for all vendor relations which involved the budgeting of software/hardware solutions.

- **Robinhood Roofing** — Denver, CO
  Sales Representative — *Jul 2023 - Dec 2023*
- **Avid4Adventure** — Aurora, CO
  Survival Skills Instructor — *Jun 2023 - Jul 2023*
- **Red Rocks Community College** — Lakewood, CO
  SysNet Intern — *Aug 2019 - May 2023*
- **Nerd Street Gamers** — Philadelphia, PA
  IT Technician — *Mar 2022 - Mar 2023*
- **TrinWare** — Centennial, CO
  Solutions Engineer — *Mar 2021 - Aug 2021*

PROJECTS

- **Meraki Network Automation and Restructuring**: Designed and implemented a Python-based automation solution using the Meraki API to streamline network infrastructure scaling. Developed tooling to automatically migrate devices, replicate configurations, and safely decommission redundant networks, reducing manual effort and minimizing downtime.
- **Enterprise Intune Migration and Modernization**: Led a six-month enterprise-wide migration from on-premises SCCM to Microsoft Intune, covering Windows updates, application management, security baselines, and device configurations. Implemented Intune Autopilot to enable seamless pre-configured device delivery directly from vendors.
- **Custom AI/ML Development Environment**: Built a production-ready AI/ML environment using Docker, JupyterHub, and SciPy stack, complete with custom Dockerfiles, Compose configurations, and CI/CD pipelines. Delivered a scalable, persistent compute platform with GitHub authentication and automated container management for data science and machine learning development.

PROFESSIONAL MEMBERSHIPS

- American Institute of Physics (AIP)
- Society of Physics Students (SPS)
- Sigma Pi Sigma ($\Sigma\Pi\Sigma$)

SKILLS AND CERTIFICATIONS

Management	IT	Data Science	Physics	Certs
Teamwork	VCenter	Tensorflow	Mechanics	CJIS
Communication	Azure/Intune	Pytorch	EM	
Project Management	Git	Pandas	Thermodynamics	
Analytical Decision Making	Docker	Excel	DiffEq / LinAlg	
Delegation	Linux	CNN/DNN	DBSR Repository	
	HPC	R	Adv Phys Lab	