# Andrew D. Gibson

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LinkedIn ■ Portfolio

**ABOUT:**

Innovative data scientist with a strong foundation in 3D computer vision, LiDAR analytics, and machine learning. Experienced in designing and optimizing 3D data processing pipelines and developing systems for intelligent, sensor-driven modeling. I thrive in collaborative, high-performance environments where creative engineering drives tangible impact.

## EXPERIENCE:

### Research Physicist, U.S. Air Force Active Duty Captain (TS Clearance)
*Air Force Research Laboratory, Sensors Directorate, LiDAR Branch*
Jun 2020 - May 2024 — *Dayton, OH*

- Led a 4-person 3D LiDAR analytics team on a $1.3M research program, delivering operational computer vision solutions for object identification and tracking in degraded sensor environments
- Fielded neural network architecture for real-time LiDAR processing onboard sensors, combining range and intensity LiDAR data to identify objects of interest with 98% accuracy and decreasing processing demands 80%
- Interfaced with the University of Dayton and external government agencies to create a deep-learning enabled point cloud labeling suite, laying groundwork for future 3D data collections supporting sensor fusion
- Directed hand-labeling of ~10GB LiDAR point cloud dataset of military installations, integrating MATLAB and PCL tools to validate state-of-the-art computer vision algorithms and support future data collection

### Independent Game Developer
*Die Fighter*
Oct 2024 - Present — *Pittsburgh, PA*

- Sole developer for a dice-based roguelike built on a modular, data-driven architecture in the Godot engine
- Created custom Godot editor add-on**s** for managing custom resources and modifying game logic, enabling content-first design of modular state-based entities, significantly reducing time to prototype and iterate
- Built an extensible effect-composition system where game actions are executed as sequences of reusable component effects, enabling rapid creation of abilities, enemies, and environmental behaviors
- Planned demo launch in Nov 2025, Steam Next Fest participation in Feb 2026, and release in Mar 2026

### Independent AI & Data Science Contractor
*Data Annotation*
Sep 2025 - Present — *Remote*

- Conducted advanced evaluation and training data creation for LLM development with a focus on data science tasks, software architecture with strict organizational and coding standards, and mathematical reasoning
- Strategically engineered prompts to expose LLM failure modes, creating structured datasets and automated correctness rubrics for model evaluation, emphasizing algorithmic precision and data integrity

## EDUCATION:

### Master of Science, Data Science
*U.S. Air Force Institute of Technology*
Oct 2021 - May 2024 — *Dayton, OH*

- Thesis: "Operational LiDAR occlusion impact on point cloud instance segmentation" – Researched the resilience of deep learning instance segmentation models under real-world 3D occlusion conditions, developing LiDAR collection simulations and neural architectures for robust object recognition and spatial mapping of point-clouds
- Relevant coursework in machine learning, statistical analysis, database architecture and datastream management, heuristics, design of experiments, empirical modeling
- Projects involving multivariate regression, database design and analytics, distributed machine learning, and reinforcement learning methods

### Bachelor of Science, Physics
*U.S. Air Force Academy*
Jun 2015 - May 2019 — *Colorado Springs, CO*

- Distinguished Graduate (top 10%)
- Senior Thesis: "Exoplanet mass prediction using machine learning techniques"

## TECHNICAL SKILLS:

- **Machine Learning and Data Science:** Tensorflow, PyTorch, NumPy, Pandas, SciPy, scikit-learn, R
- **Data Visualization:** Matplotlib, Seaborn, Plotly
- **Databases:** SQLite3 (relational)
- **Cloud and DevOps:** AWS (EC2, S3, Lambda), Git, GitHub, Docker
- **Operating Systems:** Windows, Ubuntu Linux
- **Game Engines:** Unity (4 yrs), Godot (2 yrs)
- **Languages:** Python (8 yrs), MATLAB (8 yrs), C# (6 yrs), LaTeX (5 yrs), C++ (2 yrs), Lua (2 yrs), GDScript (2 yrs), Godot Shader Language (1 yr), R (1 yr)