Dylan L Randle

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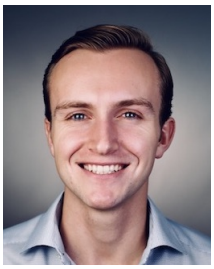

Summary

Artificial intelligence (AI) and machine learning (ML) technical leader, scientist, and engineer with 7+ years experience and proven track record building and deploying AI/ML systems for robotics, computer vision (CV), and natural language processing (NLP).

Experience

Amazon Robotics — North Reading, MA, USA

Senior Applied Scientist — *Apr 2024 – Present*

- Technical leader developing closed-loop AI policy learning systems for dexterous bimanual robotic manipulation using imitation and reinforcement learning.
- Developed first dexterous bimanual item manipulation policies at Amazon, achieving 92% success rate on unseen items. Demonstrated to Jeff Bezos, Andy Jassy, and Amazon Board of Directors.

Senior Data Scientist — *Apr 2023 – Apr 2024*

- Developed production ML systems for robotic manipulation (grasp generation, damage prediction, box packing).
- Deployed first learned action model for Sparrow. Delivered performance improvements of +35% and savings of $10 million/year.

Data Scientist II — *Jul 2020 – Apr 2023*

- Developed ML path planning optimization system for large-scale mobile robot fleets.
- Published paper demonstrating +15% throughput improvement and potential $150 million/year savings.

Data Scientist I — *Jun 2019 – Aug 2019*

- Developed AutoML system for training, evaluating, and interpreting ML models trained on trillion-row robotics datasets.
- Used by multiple scientists to speed up research and analysis workflows.

Hubdoc — Toronto, ON, Canada

Data Scientist — *Feb 2017 – Jul 2018*

- Started and led ML team from ideation to $70 million USD acquisition.
- Developed ML-based NLP system for automated data extraction from unstructured financial documents.
- Reduced data extraction time from hours to seconds.

Education

Harvard University — Cambridge, MA, USA

Master of Science in Data Science (GPA: 4.0) — *Aug 2018 – May 2020*

- Thesis: *"Unsupervised Neural Network Methods for Solving Differential Equations"*.
- Recognized with Scholarship in Applied Computation and Distinction in Teaching.
- Research and coursework focused on machine learning.

University of California, Berkeley — Berkeley, CA, USA

Bachelor of Science in Industrial Engineering & Operations Research (GPA: 3.9) — *Aug 2012 – May 2016*

- Recognized with High Honors (*magna cum laude*) and Frank Kraft Award.
- Inducted into Phi Beta Kappa, Tau Beta Pi, Alpha Pi Mu.
- Coursework focused on statistics and optimization.

Publications

- **Demonstrating Multi-Suction Item Picking at Scale via Multi-Modal Learning of Pick Success.** C Wang, J van Baar, C Mitash, S Li, **D Randle**, W Wang, S Sontakke, K E Bekris, K Katyal. RSS 2025.
- **MuST: Multi-Head Skill Transformer for Long-Horizon Dexterous Manipulation with Skill Progress.** K Gao, F Wang, E Aduh, **D Randle**, J Shi. ICRA 2024.
- **Learning Object Properties Using Robot Proprioception via Differentiable Robot-Object Interaction.** PY Chen, C Liu, P Ma, J Eastman, D Rus, **D Randle**, Y Ivanov, W Matusik. ICRA 2024.
- **Avoiding Object Damage in Robotic Manipulation.** E Aduh, F Wang, **D Randle**, K Wang, P Shah, C Mitash, M Nambi. IROS 2024.
- **DEQGAN: Learning the Loss Function for PINNs with Generative Adversarial Networks.** B Bullwinkel*, **D Randle***, P Protopapas, D Sondak. ICML 2022, AI for Science. *Equal contribution.
- **Unsupervised Learning of Solutions to Differential Equations with Generative Adversarial Networks. D Randle**, P Protopapas, D Sondak. arXiv:2007.11133, 2020.
- **Unsupervised Neural Network Methods for Solving Differential Equations. D Randle**. Master's Thesis, Harvard University, 2020.

Projects

- **Rubik's Cube Solving Robot:** A robot that autonomously solves a Rubik's cube in under 3 seconds. Leverages integrated perception to inspect the cube, Kociemba's algorithm to plan a solution, and stepper motors to solve it. Demo available on my website.

Technical Skills

- **Languages:** Python, C++, Javascript/Typescript, SQL.
- **Libraries:** PyTorch, Keras/Tensorflow, OpenCV, Open3D, Pandas, NumPy, SciPy, Scikit-Learn, React.
- **Platforms:** AWS, Docker, Firebase, Linux, MacOS.