

Bowen Kruse

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I build and deploy computer vision/machine learning solutions that answer important questions. Data-centric machine learning and a customer-focused development process are the tenets of my work.

RELEVANT PROFESSIONAL EXPERIENCE

BNSF Railway

Computer Vision/Machine Learning Engineer - Machine Vision Services

January 2022 - Current

- Founded a project that scaled to nationwide deployment generating an estimated 8-figure ROI. 2 patents pending and won BNSF Railway 2023 Invention of the Year.
- Built model development pipeline that serviced multiple internal projects, and managed the construction of a model deployment (NVIDIA Jetson) pipeline enabling deployment of true-edge use cases.
- Developed use-case agnostic platforms enabling faster deployment and adoption of greenfield approaches that so far has allowed four projects to become cost-feasible.
- Improved existing object detection model accuracy by 26% mAP for drone-based OCR use case.
- Cultivated strong relationships with internal customers, emphasizing adoption and best practices to achieve a swift average three-quarter time-to-production.
- Increased project sustainability and secured internal funding by consistently presenting clear, analytic project health reports to leadership and as a result consistently received the highest possible internal performance review score.
- Directed a team of annotators and developers, driving team productivity and project outcomes while maintaining a data-centric approach to modeling.

Application Development Intern - Technology Services Intern

Summer 2021

- Enhanced train wheel damage detection process by developing computer vision models, contributing to improved maintenance processes saving millions of dollars per year.
- Built a timeline web application using the Django Framework that enabled cross-team alignment.

Montana State University

Undergraduate Teaching Assistant - Joy and Beauty of Data

Fall 2021 Semester

- Created teaching plans and delivered content during labs and lectures. Organized exam review sessions, and held 1:1 tutor sessions. My focus on translating complex topics to simple terms and strategically assisting struggling students resulted in the lowest drop-out rate of any section.

SKILLS & INTERESTS

Preferred Programming Languages: Python, Java, Golang, C++, Dart

Expertise in: Traditional and Machine Learning (Transformers, CNNs) Based Computer Vision, Tabular Machine Learning, Defect Detection, PyTorch Tensorflow, Basic MLOps, Docker Development/Deployment, multiple web app frameworks, Linux CLI/Distributions, embedded software, GitHub, AWS SageMaker, Azure, REST, both SQL and NoSQL (MongoDB) database systems, Data Modeling, and the software development lifecycle.

EDUCATION

Montana State University -

Computer Science

Bozeman, MT

2018-2021

- GPA: 3.64/ 4.0
- An active member of the Association for Computing Machinery and IEEE (August 2018 -current)
- Undergraduate Teaching Assistant for 'Joy and Beauty of Data'

American University of Sharjah - ISEP Foreign Exchange

Computer Science/Arabic Language Studies

United Arab Emirates

Fall 2019 - Spring 2020

- GPA: 3.5/ 4.0

Professional Certifications/Ratings

- IBM Applied AI Professional December 2020
- Remote Pilot 2022 - Current
- Private Pilot with Instrument and Multi-engine rating 2016 - Current