

# AYUSH BHUSAL

400 Blake Street, New Haven | +1 (475) 434-7918 | [bhusalayush5@gmail.com](mailto:bhusalayush5@gmail.com) | [LinkedIn](#) | [Portfolio](#)

## Summary

ML Engineer and Data Scientist with 1+ years of experience delivering scalable AI solutions, predictive models, and automated analytics pipelines. Experienced in deploying ML systems in production, improving operational efficiency, and translating complex data into actionable insights. Proven track record in automating workflows, optimizing media campaigns, and building end-to-end ML pipelines.

## Education

### University of New Haven, West Haven, CT

Dec 2025

*Master of Science, Computer Science*

- **GPA:** 3.97

### Coventry University, Coventry, UK

Sep 2019 - Jul 2023

*Bachelor of Science, Computer Science*

- **Achievements:** Graduated with First Class.

## Experience

### University of New Haven

Jan 2025 - Present

*Graduate Research & Teaching Assistant*

*West Haven, CT*

- Conducted research on multi-class segmentation, data visualization, and model interpretability using PyTorch, leading to enhanced understanding and development of more accurate models
- Co-authored academic papers by conducting literature reviews, analysis, and creating visualization prototypes, contributing to published research that advanced knowledge in the field
- Assisted in teaching Data Structures and Introduction to AI by holding office hours, grading, and mentoring students, which improved student understanding and performance in these subjects

### Medialab Group

Jun 2021 - Jul 2022

*Data Scientist*

*London, UK*

- Refactored workflows and legacy codes, boosting system efficiency 20% and reducing dashboard errors 30% (Python, SQL).
- Led "Automate or Eliminate," cutting manual reporting 55%, saving ~5 analyst hrs/week confirmed via team feedback.
- Built predictive models (Scikit-learn, XGBoost) improving media targeting, CTR +12%, conversion lift +8%.
- Applied Media Mix Modeling using statistical analysis to optimize campaign ROI for non-profits, enhancing budget allocation and increasing donor engagement
- Developed dashboards in Adverity/Power BI, reducing report turnaround time 40%.
- Automated AWS batch workflows for 24/7 data processing, improving data handling efficiency and reducing manual intervention

## Skills

- **Programming:** Python, R, SQL, C++, C#, HTML/CSS, JavaScript
- **Machine Learning & AI:** Scikit-learn, XGBoost, PyTorch, U-Net (Instant Segmentation), Semantic Segmentation, OpenCV, COCO Format, TensorFlow (basic), NLP (LDA, Sentiment Analysis), Media Mix Modeling
- **Data Analysis & Visualization:** Pandas, NumPy, Tableau, Matplotlib, Seaborn, A/B Testing, Data Cleaning, EDA
- **Cloud & DevOps:** AWS (S3, EC2, Lambda, SageMaker, Amplify, CloudWatch, IAM, RDS), Terraform, Docker, Kubernetes, Auto-scaling, CI/CD Pipelines
- **Tools:** Git, GitHub, Airflow, API Integration, Flask, Django, OOP, Unit Testing

## Projects

### TrashNet-Vision: Multi-Class Segmentation

- Built a U-Net segmentation pipeline on 60-class TrashNet masks using COCO-format polygons.
- Achieved 88%-pixel accuracy and 72% mIoU with boundary-preserving outputs.

### Feedback System for YouTube Creators

- Extracted video transcripts and comments, performed sentiment analysis and topic modeling (LDA), and provided automated feedback.
- Automated visualizations with Seaborn and deployed interactive summaries..

### Census Income Prediction (ML Pipeline)

- Trained classifiers (SVC, Logistic Regression, Random Forest, Gradient Boosting) on UCI Adult dataset.
- Achieved 87% accuracy with Gradient Boosting and built modular ML pipelines.

### Automated Client Reporting Framework

- Reduced manual reporting by 5 hours/analyst/week via automated client decks and A/B test summaries.

### MusicMate: Cross-Platform Companion App

- Developed mobile-first app with real-time lyric search, playlist management, and API integration.
- Implemented MVVM architecture and deployed to Android & Windows via CI pipeline.