

# MATEJA MILICEVIC

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## Education

### Michigan State University

Sep. 2024 – Present

*Ph.D. in Biosystems Engineering, Thesis: Improving metagenomics analysis via Deep Learning and AI. East Lansing, MI*

### Michigan State University

Sep. 2020 – May 2024

*Bachelor of Science in Data Science*

*East Lansing, MI*

## Technical Skills

**Languages:** Python, R, C++, HTML/CSS, JavaScript

**Technologies/Frameworks:** PyTorch, scikit-learn, Dask, Django, Next.js, Supabase, PostgreSQL, Express, Docker, AWS

**Concepts:** Software Engineering, Machine Learning, Deep Learning, Statistical Analysis, High Performance Computing

## Experience

### Food AI and Engineering Lab

Oct. 2023 – Present

*Research Assistant*

*East Lansing, MI*

- Published work on forecasting pathogen persistence using LSTM model, achieving an **MSE of 0.09**
- Developed an EM-based imputation method with a Neural Additive Model, where LR testing for data separation was used to enhance imputation accuracy on microbiome count data, **boosting modeling kappa score by 0.023**.
- Trained a BERT type model for genome ORF classification improving accuracy over prior methods to **93%**

### NASA-Laser Energized Aerial Delivery System

Feb. 2024 – Present

*Data Scientist*

*East Lansing, MI*

- Created a kinematic machine learning model using PyTorch for predicting UAVs position to charge it with a laser.
- Aided in designing and implementation of a high-frequency data pipeline for drone to ground station communication.
- Presented to NASA a tech talk on our **\$100,000** grant project, leading to a promotion to Project Manager of the lab.

### Imagine Software Club

Jan. 2023 – Present

*Founder and Grad Advisor*

*East Lansing, MI*

- Facilitated an internship-like experience by interviewing & placing students on project teams with clients from fellow students, faculty, and companies to create MVPs and POCs for software, **generating over \$15,000 ARR**
- Secured sponsorships from Fortune 50 companies (LinkedIn, Slalom, Humana) to conduct workshops and events.
- Lead organization and scaled membership by over **750+ members**. Attracted client projects from startups at MSU.

### BOSCH Switzerland

March. 2025 – Present

*Software Engineer*

*Remote*

- Trained YOLOV11 model using custom data augmentation for product material detection with **mAP50 of 0.91**.
- Developed a NextJS web application for easy of use for the client. Model hosted on modal for scalable inference.

### QMRA Wiki

Jan. 2023 – Jan. 2024

*Software Engineer*

*East Lansing, MI*

- Built Python/R pipeline for MSU sewage data, **saving 5 hours/week** on acquisition and processing.
- System administration of the wiki hosted on AWS EC2. Aided in developing major version wiki updates.

## Projects

### Zillow Scanner | Python, PyTorch, ReactJS, Cloudflare, MongoDB, Docker

- Trained a ResNet model that identifies with **97.6% accuracy** Zillow properties with unfurnished rooms. Increased speed using parallel computing techniques. Simple self-hosted web solution made in React.js for client use.

### patchrus.com | NextJS, supabase, ffmpeg, Docker, Google APIs, AWS

- Developed a webapp for a drywall franchise that processed over 700 leads turning into **\$220,000+ ARR**.
- Built a full-stack platform automating client acquisition processes saving hours every week.

## Publications

Sharma, D., Kraft, A. L., Owade, J. O., Milicevic, M., Yi, J., & Bergholz, T. M. (2024). Impact of Biotic and Abiotic Factors on *Listeria monocytogenes*, *Salmonella enterica*, and Enterohemorrhagic *Escherichia coli* in Agricultural Soil Extracts. *Microorganisms*.