Engineering Honors Capstone Project
Little Caesars MDP: Pizza Quality Evaluator

Batuhan Akcay
About Me

Graduated in WN2021 from Engineering Honors with a B.S.E in Computer Science

My favorite college experiences were mostly with my friends at UM Taekwondo
Why MDP?

- Interaction with sponsor companies
- Working together as a team
- Getting hands-on experience
Meet Our Team

Kevin Li
Ran Yoo
Nicole Valdespino
Susie Alptekin
Amanda Yao
Batuhan Akcay
Ziyang Ji
Sponsors:

Tim Somero
Lead Software Development

Kevin Hinks
Lead Software Engineer

Faculty:

Brent Griffin
Assistant Research Scientist, Electrical Engineering and Computer Science
What's behind Little Caesars?
What's behind Little Caesars?

Serve Others

Own your work

Invent something
Little Caesars strives to provide the highest quality pizza every time.
Motivation

LOW QUALITY PIZZA VS HIGH QUALITY PIZZA
Motivation

HIGH QUALITY PIZZA VS HIGH QUALITY PIZZA
HIGH QUALITY PIZZA VS HIGH QUALITY PIZZA

PIZZA! PIZZA!
TECHNOLOGY \rightarrow \text{PIZZA ANALYSIS} \equiv \text{HIGHEST QUALITY}

\begin{align*}
\text{The best pizza} \quad &\quad \text{Every time}
\end{align*}
COMPUTER VISION → PIZZA ANALYSIS = HIGHEST QUALITY

The best pizza

Every time
Stakeholders: How our project benefits LCE?

**OUR PROJECT**

- **EMPLOYEE**
  - Employee Skills

- **PIZZA QUALITY**

- **CUSTOMERS**
  - Satisfaction/Retention

- **STORE REVENUE**

- **CORPORATE**
Goal and Objectives

A system to help quantify pizza quality and make perfect pizza consistently
Goal and Objectives

- Quantify existing pizza quality standards
- Identify poor quality pizza vs. high quality pizza through pizza images
- Give feedbacks to employees
- Easy to use for employees
- Easy to manage for Little Caesars
Design Phases: Winter 2020

1/17  Phase 1:  Start up and Background Research  
**Milestone:** Understand Machine Learning and Computer Vision

1/31  Phase 2:  Define Project Requirements and Scope  
**Milestone:** Set expectations with LCE Sponsors

2/14  Phase 3:  Data Collection and Augmentation  
**Milestone:** Complete Dataset of Images

4/17  Phase 4:  Preliminary Development and Testing  
**Milestone:** Determine System Requirement

4/24  Milestone:  Minimum Viable Product
10/9  Phase 5:  Complete Software Development
   Milestone:  Gather Feedback

10/30 Phase 6:  Final Testing and Redesign
   Milestone:  Incorporate User and Sponsor Feedback

11/20 Phase 7:  Contingency Time and Stretch Goals
   Milestone:  Finalize Product and Design

12/5  Phase 8:  Final Design Presentation and Delivery

12/11  Milestone:  Final Product Delivery
My Experience

- Working as a team makes the experience more enjoyable but also brings challenges with it.
- Great communication is the key to project success.
- Setting appropriate scope and requirements for project is critical.
- You can’t always meet every requirement and deadline, setting your priorities is very important.
- Computer vision is a field that I enjoyed a lot and in future I would like to work more in this field.
THANK YOU!

Q&A