Hands-On Experience Overview

Alan Chen

Purdue University - Computer Engineering

- **Personal Introduction**
- **Work Experience**

Personal Introduction

Relevant Coursework:
Python for Data Science
Deep Learning

Technical Skills:
Programming Languages: C, C++, Python
Tools & Platforms: Linux, GitHub
Methodologies: Agile Development, Test-Driven Development

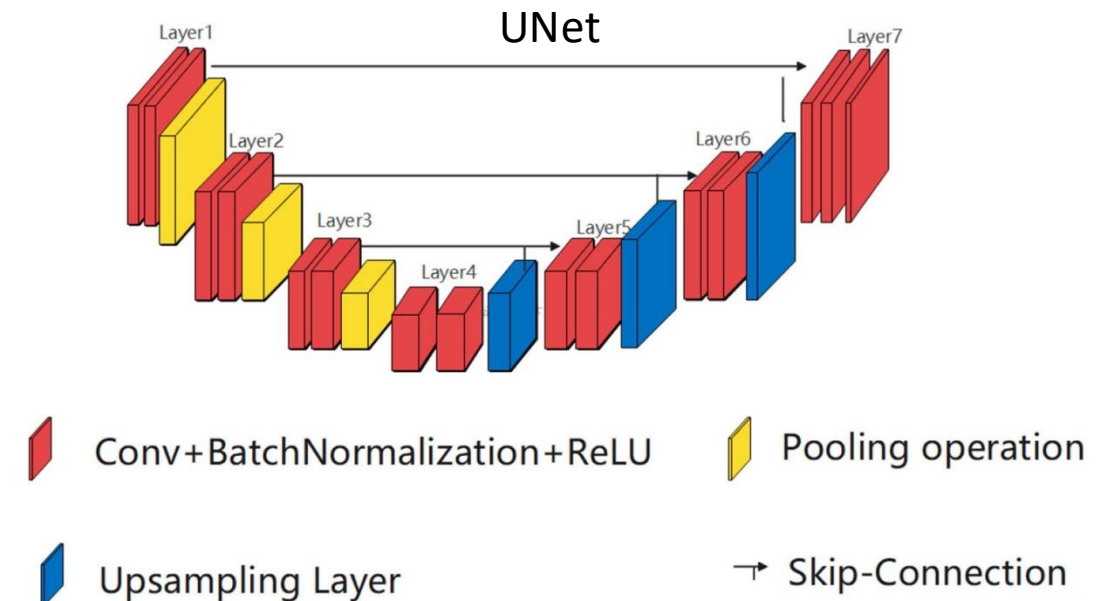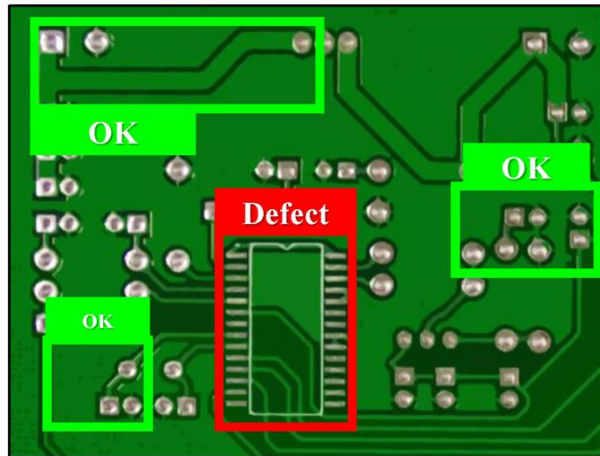**Personal Attributes:**
Positive and open-minded attitude
Thrive in team environments, leveraging interpersonal strengths

Work Experience (1)

Pegatron Corporation

Artificial Intelligence Software Engineer Intern

- Deployed UNet model & Vision Prompt Segmentation model for defect detection.
- Reduced undetected defects by 5%
- Built an AI Model Comparison Tool

Visual Prompt AI for Defect Detection

Impact I can bring to Ariel Premium Supply

- Quick solution for defect detection
- Handles wide product variety

	Traditional Method (UNet)	Visual Prompt Method (SegGPT)
Data Requirement	Requires large, labeled datasets for each product	👑 No need for large labeled datasets; uses visual prompts
Accuracy	👑 Higher accuracy for specific tasks	Lower accuracy for specific tasks
Flexibility	Limited to specific product types it was trained for	👑 Highly flexible; can be applied to a wide variety of products
Cost Effectiveness	Expensive due to dataset labeling and training requirements	👑 Cost-effective due to reduced need for labeled data and retraining

Visual Prompt AI for Defect Detection

Example

Visual Prompt Input

Visual Prompt AI for Defect Detection

Example
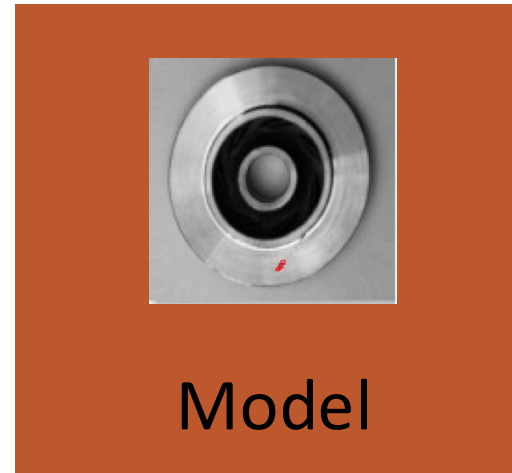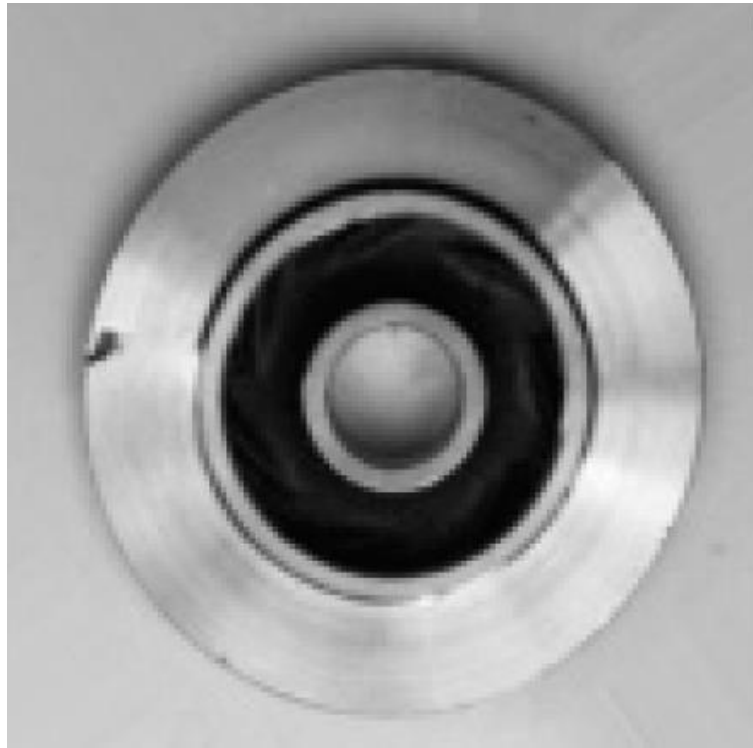
Visual Prompt Input

Labeled Visual Prompt Input

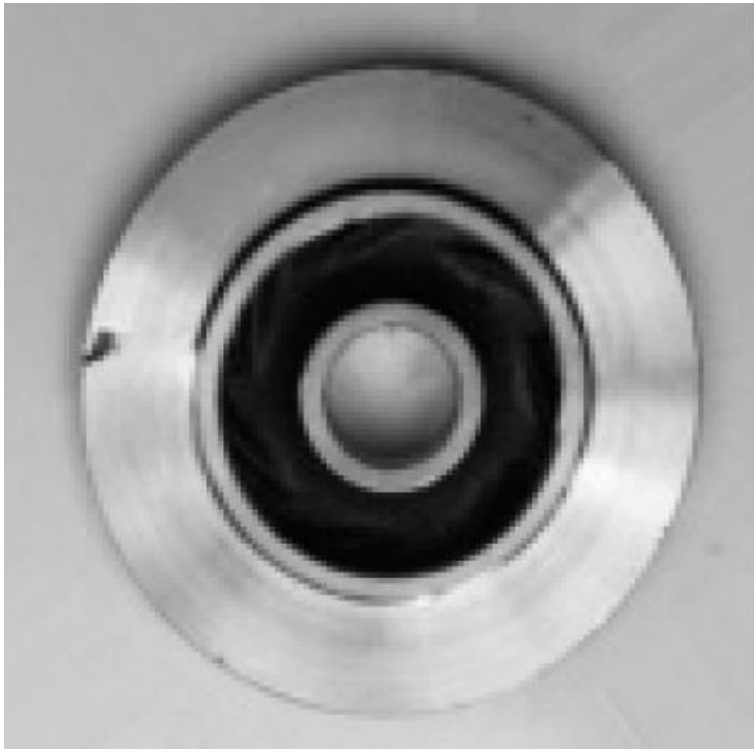# Visual Prompt AI for Defect Detection

Example
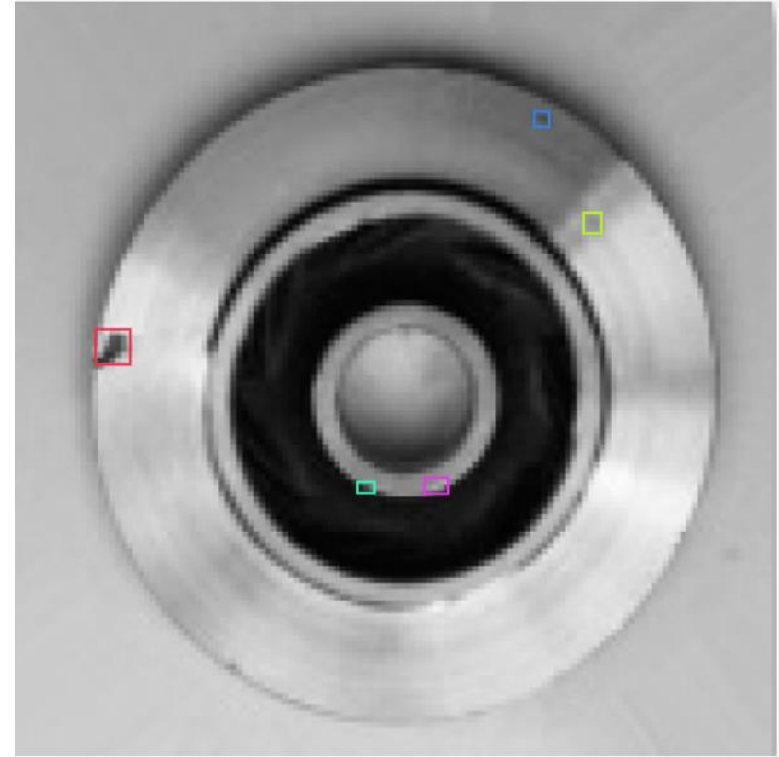

Model Input

Model

Visual Prompt AI for Defect Detection

Example

Model Input

Model Output

Work Experience (2)

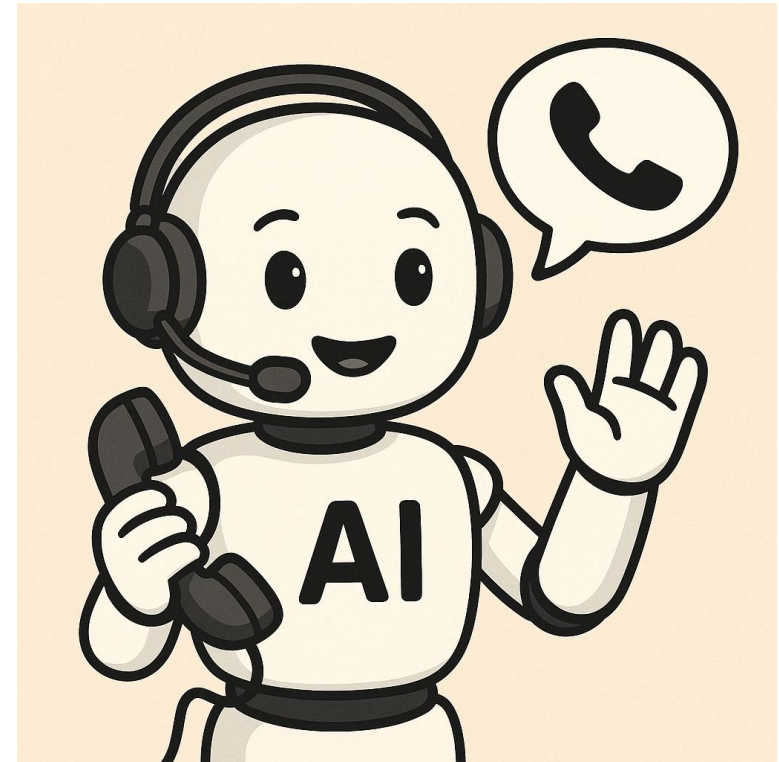## Sky Lab – Corporate Research Lab (Purdue & UW–Madison)

- Fine-tuned LLMs for WisDOT
- Improved project planning via WisTMP
- Real-world collaboration with state agencies
- Supports generation of Transportation Management Plans

LLM Integration for Factory Intelligence

Impact I can bring to Ariel Premium Supply

- Build LLM-powered customer service assistant
- Enable workers to access real-time production line data using natural language queries.
- Improve communication, efficiency, and decision-making on the factory floor
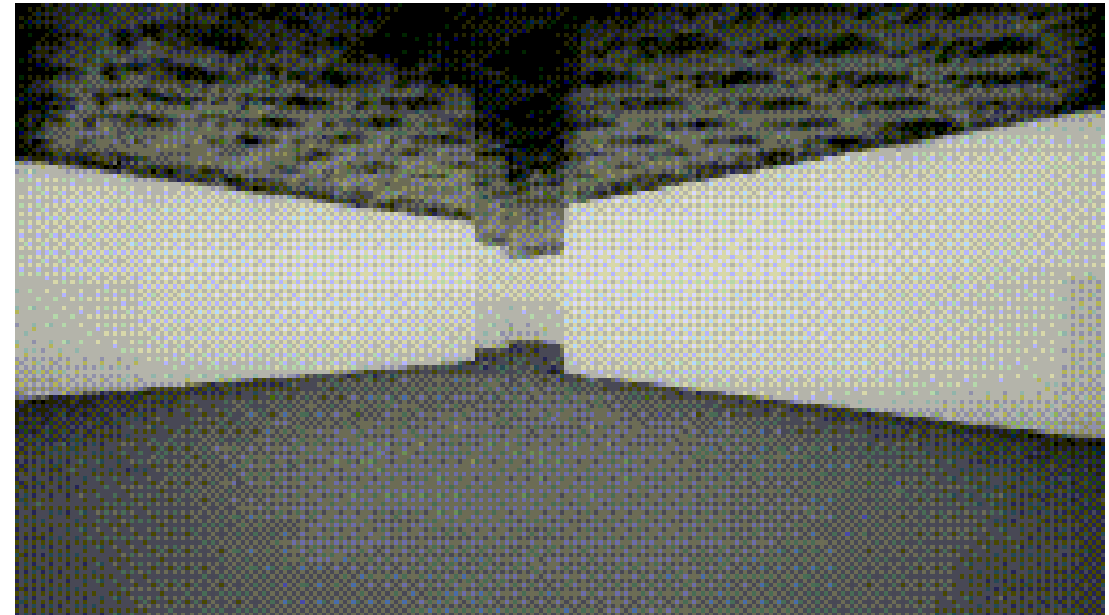
Work Experience (3)

Senior Design Project – Autonomous Drone
Project Leader

- Trained autonomous drone in Microsoft AirSim
- Applied Deep Reinforcement Learning
- Focused on indoor search & rescue
- Strengthened skills in team leadership

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