AI for Computational Design and Manufacturing AI for Engineering: Design-to-Deployment Workflows Course Schedule

Instructor: Wojciech Matusik (MIT)

Time	Day 1 – July 21	Day 2 – July 22	Day 3 – July 23	Day 4 – July 24	Day 5 – July 25
9:00am	Module 1: LLM-	Module 3: Predictive	Module 5: Computer Vision	Module 7: Validating,	Module 9: Transformer
_	Driven Parametric	Modeling & Responsible	for Quality Control & Robotic	Securing & Trusting	Models for Predictive-
10:45am	CAD Workflows	Al in Engineering	Inspection	Engineering AI Models	Maintenance Time-Series
10:45am	Module 1: Hands-On	Module 3: Hands-On	Module 5:Hands-On Defect	Module 7: Hands-On Cross-	Module 9: Hands-On Fine-
_	Prompt-Based CAD	Model Training + MLflow	Detection with CNN / Vision	Validation, Uncertainty &	Tuning Transformers on
12:30pm	Generation	Experiment Tracking	Transformer Models	Adversarial Robustness	Sensor Logs
12:30pm _ 1:30pm	Lunch Break	Lunch Break	Lunch Break	Lunch Break	Lunch Break
1:30pm	Module 2: Generative	Module 4: AI-Optimized	Module 6: Neural Surrogates	Module 8: Sim-to-Real	Module 10: Integration
_	AI Agents for	CAM: Subtractive,	& Transformers for Materials	Calibration, TinyML &	Framework & Workflow
3:15pm	Engineering Analysis	Additive & RL Paths	Simulation	Streaming Digital Twins	Customization
3:15pm	Module 2: Build &	Module 4: Hands-On	Module 6: Hands-On	Module 8: Hands-On Live	Module 10: Hands-On
_	Test a LLM	Tool-Path Optimization	Simulation Surrogate Training	Sensor Calibration & Real-	End-to-End AI Engineering
5:00pm	Engineering Agent	& Sustainability Metrics	+ Bayesian Hyper-Tuning	Time Twin Update	Workflow Build-Out