

AC215 FALL 2024 SCHEDULE

| Week | Date | Session | Lecture |
|------|-------|---------|--|
| 1 | 9/3 | 1 | Introduction |
| | 9/5 | 2 | Virtual Enviroments and Virtual Machines |
| 2 | 9/10 | 3 | Containers I |
| | 9/12 | 4 | Containers II |
| 3 | 9/17 | 5 | Data Pipelines/ Data Management: Extract, Transform, Load (ETL) and Data Version |
| | 9/19 | 6 | TF Data, TF Records, PyTorch Dataset, DataLoader, Cloud Storage |
| 4 | 9/24 | 7 | LLM tools and agents 1: LangChain, LlamaIndex, API calls, RAG, AI agents |
| | 9/26 | 8 | LLM tools and agents 2: LangChain, LlamaIndex, API calls, RAG, AI agents |
| 5 | 10/1 | 9 | LLM fine tuning and LORA |
| | 10/3 | 10 | LLM fine tuning QLoRA |
| 6 | 10/8 | | PROJECT WEEK |
| | 10/10 | | |
| 7 | 10/15 | 11 | Model Optimization: Distillation, Compression |
| | 10/17 | 12 | Advanced training workflows: experiment tracking (W&B), multi GPU, serverless training (Vertex AI) |
| 8 | 10/22 | 13 | Model Deployment: Hosting, APIs, and Serving LLMs |
| | 10/24 | 14 | Modal Labs Guest Lecture Zoom |
| 9 | 10/29 | 15 | Testing, Cloud Functions, Cloud Run, Kubeflow, Vertex AI Pipelines |
| | 10/31 | | Midterm |
| 10 | 11/5 | 16 | Automating Software Development: CI/CD with GitHub Actions and other tools [IB] |
| | 11/7 | 17 | App design, setup and code organization (SJ) |
| 11 | 11/12 | 18 | APIs & Frontend (SJ) (Frontend - React (SJ) Optional Extra to be Scheduled) |
| | 11/14 | 19 | Deployment: Ansible |
| 12 | 11/19 | 20 | Scaling: Kubernetes |
| | 11/21 | 21 | Final: CI/CD releases etc |
| 13 | 11/26 | | THANKS GIVING WEEK |
| | 11/28 | | |
| 14 | 12/3 | | PROJECT TIME |
| | 12/9 | | Showcase |
| | 12/11 | | DELIVERABLES DEADLINE |