# Baosen Zhang

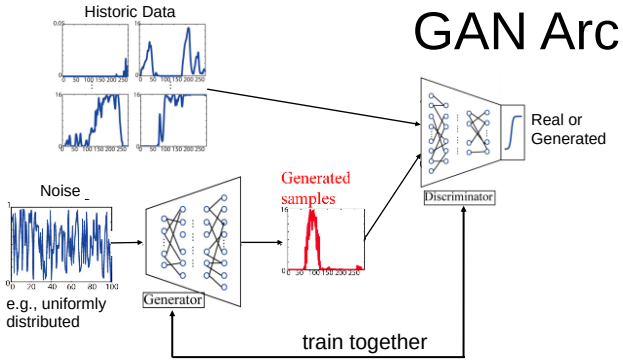
- 2015- Present: ECE at the University of Washington
- PhD from UC Berkeley, Postdoc at Stanford
- https://zhangbaosen.github.io/
- https://scholar.google.com/citations?user=3svZOGAAAAAJ&hl=en

# Research

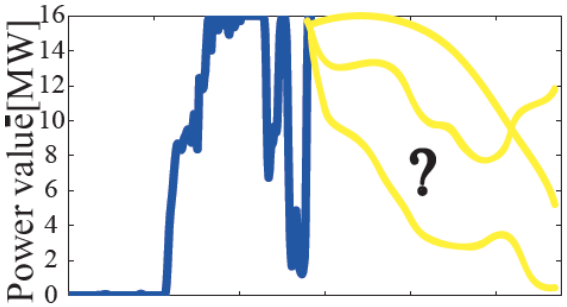
- My group works on various topics in power and energy systems
- Optimization (OPF)
- Forecasting and scenario generation
- Control and learning for nonlinear systems

# Scenario Generation

- Largescale generation of solar and wind data



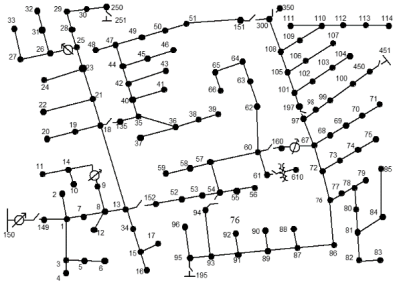

- Conditional Forecasting

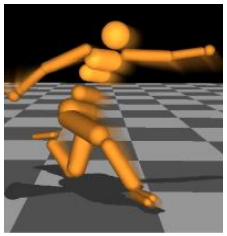


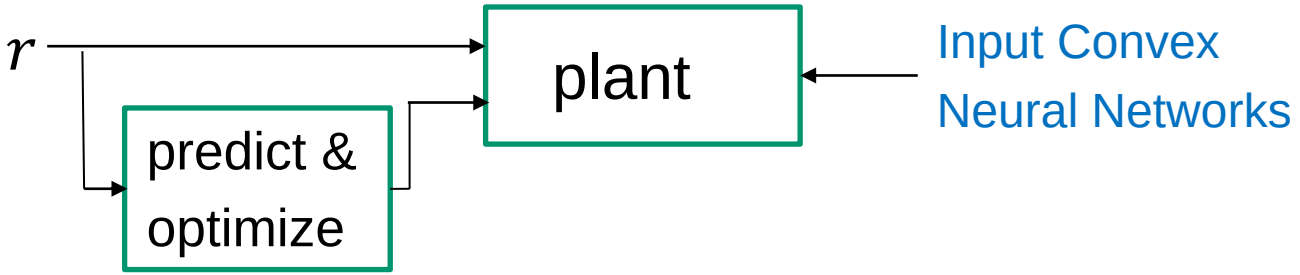

- Applied by Seattle City Light in planning

# Modeling and Learning

- Lots of physical systems are not linear, but learning them using ``standard'' DNNs are not suited for control



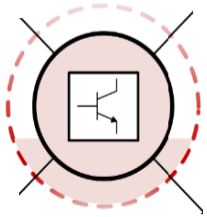


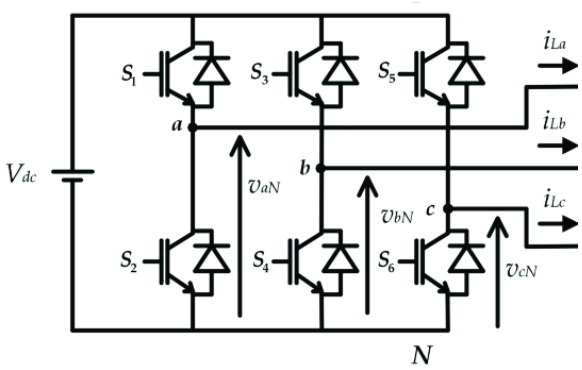


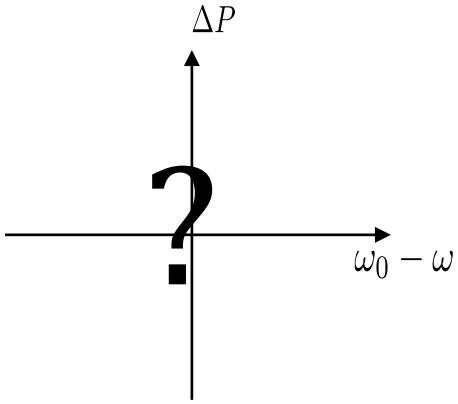

- Convex control problems, can do theory
- Used on UW campus buildings

# Control and Learning

- Designing controllers for inverters






- Finding the right structure on neural networks (monotone)
- Leads to provable guarantees on stability and performance