

Master's dissertation and Doctor's dissertation on AI implement in boiler control system in DSC?

Give me large number of paper asap.

Here are **multiple dissertations and theses** relevant to the implementation of **AI technologies in boiler control systems using Distributed Control Systems (DCS)**, including both master's and doctoral works. For each entry, you'll find the dissertation title, author, institution (if available), and a brief topic focus based on the provided metadata and accessible content:

1. Fault Detection Automation in Distributed Control Systems using AI

- **Type:** Likely Master's/PhD dissertation
- **Access:** [PDF]^[1]
- **Topic:** AI (including fuzzy logic, SVM, KNN) techniques for fault detection in DCS—applicable for boilers and other industrial systems.
- **Summary:** Explores automated, data-driven fault diagnosis and classification in DCS using modern artificial intelligence methods, reducing the need for onsite specialists and improving speed/accuracy of fault localization.

2. Distributed Control, Optimization, and State Estimation for Renewable Power Systems

- **Author:** Not specified
- **Institution:** University of Denver
- **Type:** Ph.D. Dissertation (2021)
- **Access:** [Digital Commons @ DU]^[2]
- **Topic:** Distributed AI and optimization in power systems using DCS; details consensus protocols, AI controllers (including neural networks), and economic dispatch algorithms for distributed/renewable systems.
- **Summary:** Presents distributed control strategies and the application of neural networks for optimal power flow and state estimation, models which are directly applicable in modern AI-augmented DCS architectures for boilers.

3. Renewable Energy Integration in Distribution System with Artificial Intelligence

- **Author:** Yi Gu
- **Institution:** University of Denver
- **Type:** Ph.D. Dissertation (2020)

- **Access:** [Full Text PDF] ^[3]
- **Topic:** Applies various AI techniques to optimize control and integration of energy systems; while focused on wider power networks, many models are applicable to advanced DCS boiler management.
- **Summary:** Evaluates machine learning models and optimization methods for improved efficiency and reliability in distributed control, valuable for AI-driven boiler processes.

4. Advancing Intelligent DC Microgrids: AI-Enabled Control, Cyber...

- **Author:** Yihao Wan
- **Institution:** Technical University of Denmark
- **Type:** Ph.D. Thesis (2023)
- **Access:** [Orbit, DTU PDF] ^[4]
- **Topic:** AI/ML-driven control and cyber-defense for distributed (DC) control systems, with deep dives into reinforcement learning, cyber-attack detection, and multilayered AI control frameworks.
- **Summary:** Although focused on microgrids and advanced power electronics, the control concepts, fault detection, and reinforcement learning methods are increasingly being adapted to DCS applications in steam boilers and similar thermal systems.

5. Artificial Intelligence to Enable Smart Prognostics and Health Management within Smart Factories

- **Institution:** Northeastern University
- **Type:** Likely Ph.D. Dissertation
- **Access:** [Full Text PDF] ^[5]
- **Topic:** AI-enabled prediction, health diagnostics, smart manufacturing with DCS layers, and condition-based maintenance.
- **Summary:** Provides insight into predictive diagnostics and AI integration in distributed control environments—directly translatable to boiler automation.

6. Dissertations/Theses on Distributed Control System (DCS)

- **Access:** [Grafiati Index] ^[6] (lists dissertations/theses specifically focused on DCS)
- **Summary:** Comprehensive scholarly index; search for keywords such as "AI," "boiler," "power plant," or "intelligent control" to find targeted works, some of which will specifically address AI-based boiler optimization.

Additional Theses:

- **Safe and Scalable Learning-Based Control: Theory and Applications**
 - **Caltech** ([PDF] ^[7]; focus on AI-driven safety/constrained control in large-scale cyber-physical systems).
- **Distributed Model-based Control for Gas Turbine Engines** ([PDF] ^[8]; not a boiler but many techniques overlap, focusing on distributed AI for complex thermal systems).
- **Agents and SCT Based Self-Control Architecture for Production Systems** ([PDF] ^[9]; distributed intelligent agents for process automation, broadly relevant to DCS with AI in boiler contexts).

How to Find More Dissertations

- Use databases like **ProQuest Dissertations & Theses**, **Google Scholar**, **IEEE Xplore**, **Springer Theses** (search: "AI in boiler DCS", "intelligent boiler control", "machine learning boiler control DCS", "distributed control system thesis").
- **Grafiati** ^[6] is a meta-list with direct links to DCS-focused dissertations—search with specific AI-related keywords.

Example Search Strings for More Results

- "Artificial intelligence implementation in distributed control systems for boiler optimization dissertation"
- "Master's thesis AI-based boiler control DCS"
- "PhD neural network boiler fault detection DCS"
- "Distributed PID/neural/fuzzy/ANN control boiler thesis"
- "Predictive maintenance boiler AI DCS"

If you need direct full-text PDFs, many of these links (^[4], ^[3], ^[1], ^[8], ^[9], ^[7], ^[5]) lead to open-access university repositories or direct downloads. For even more, use institutional or public research libraries with access to dissertation databases.

Citations Used:

^[4] ^[2] ^[3] ^[1] ^[8] ^[9] ^[7] ^[5] ^[6]

If you want more targeted recommendations (e.g., only master's level, only Ph.D., or by a specific region/university), please specify.

✱✱

1. https://www.techrxiv.org/users/680470/articles/677157/master/file/data/ieee_dcs_fd_last_corrected/ieee_dcs_fd_last_corrected.pdf
2. <https://digitalcommons.du.edu/etd/1944/>
3. <https://digitalcommons.du.edu/cgi/viewcontent.cgi?article=2766&context=etd>
4. https://orbit.dtu.dk/files/364012612/PhD_thesis_-_Yihao_Wan.pdf
5. <https://repository.library.northeastern.edu/files/neu:4f21z8791/fulltext.pdf>

6. <https://www.grafiati.com/en/literature-selections/distributed-control-system-dcs/dissertation/>
7. https://thesis.library.caltech.edu/16653/2/Caltech_Thesis_JY.pdf
8. <https://etheses.whiterose.ac.uk/id/eprint/23818/1/Thesis.pdf>
9. [https://opendata.uni-halle.de/bitstream/1981185920/12173/1/Agents and SCT based self control architecture for production systems.pdf](https://opendata.uni-halle.de/bitstream/1981185920/12173/1/Agents%20and%20SCT%20based%20self%20control%20architecture%20for%20production%20systems.pdf)