CSE - URP
CFD STUDY HOMEWORK 1
INDUSTRY TREND ANALYSIS REPORT
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2020272006 김경윤

This report summarizes industry trends based on three search keywords: CFD, Heat Transfer, Transfer Analysis, on 3 different job platforms: Jobkorea, Saramin, LinkedIn. A total of 53 job openings were collected (JobKorea: 2, Saramin: 48, LinkedIn: 13), with 12 sorting class features including company name, industry, requirements and preferences.

All data is collected between JAN 7 2026 - JAN 11 2026.

This report will mainly address the following 3 questions.

1. **Industries employing CFD engineers**
2. **Core technical skills and software requirements**
3. **Degree requirements and graduate-level preference**

> Computational fluid dynamics (CFD) is defined as a branch of fluid mechanics that employs numerical techniques to predict fluid flow, heat and mass transfer, and chemical reactions across various engineering applications. [1]

1. Industries employing CFD engineers

In our dataset, there were 16 different industry fields. Including Aerospace, Vessel, Power Plants, Battery, Software and Semiconductor, **all 16** had at least one position open for CFD engineers.

The most commonly needed CFD engineering sector was: **CFD Analysis**.

Job description of CFD Analysis Engineer example:

> The engineer will be responsible for conducting dispersion analysis, heat transfer studies, and fire/explosion simulations. Daily tasks will involve fluid mechanics, fluid dynamics modeling, and working collaboratively with the engineering team to develop solutions for various fire and risk management challenges. The role will require a hands-on approach to research, analysis, and application of fluid dynamics principles in real-world scenarios. [2]

Given CFD's definition in a larger sense includes heat transfer, mass transfer, transfer analysis, when searched with HT/MT/TA keywords, almost every position included certain parts of CFD in the job description.
Even with systemic built in bias in our collected dataset, we still were able to find CFD engineers are most predominantly hired in the **thermal engineering sector.**

Within **33 open CFD-related positions, 17 (51.5%) positions** were hiring CFD engineers for **thermal analysis.**

2. Core technical skills and software requirements

For CFD analysis: **ANSYS Fluent/Icepak/Thermal desktop (10), STAR-CCM+ (3), and CATIA (6)** softwares are used. Some job postings did not provide CFD software names, however a lot of positions used multiple tools. This explains how the numbers do not add up to match 33 CFD positions.

Whilst CFD analytic skills are most profoundly needed, the second most wanted skill was CAD ability. Most of the collected positions wanted skills or experiences of either CFD or CAD if not both.

The predominant industrial standard for CAD software was: **AutoCAD (10), SolidWorks (5), CREO (3)**. Most of the positions (80%) listed more than one type of CAD software.

3. Degree requirements and graduate-level preference

In total of 53 positions,

2 required GED (3.77%)
2 required Associate's Degree (3.77%)
44 required Bachelor's Degree (83.02%)
5 required Masters (9.43%)

17 positions (32.08%) preferred MS and above.

1 position demanded a certificate of engineering (Engineer Air-Conditioning Refrigerating Machinery), on the other hand, 4 of positions listed certification holders as preferences.

Citations

[1] Computational Fluid Dynamics - an overview | sciencedirect topics. (n.d.). https://www.sciencedirect.com/topics/materials-science/computational-fluid-dynamics

[2]1,000+ CFD jobs in United States. (n.d.). https://www.linkedin.com/jobs/search/?currentJobId=4341074083&geoId=103644278&keywords=CFD&origin=JOB_SEARCH_PAGE_SEARCH_BUTTON&refresh=true