DANIEL ALAN COLLINS

CONTACT

dacdynamics@gmail.com
H (+1) 408-837-2201 [CA]
M (+1) 248-778-7572
LINKEDIN: MRDANIELCOLLINS

SKILLS

PROGRAMMING
Python, Java, Bash,
PowerShell, MATLAB, JMP

OPERATING SYSTEMS
Linux/Unix, MacOS, MS Windows

SIMULATION
STAR-CCM+ (10 years), ANSYS
CFX/Fluent, TAITherm

MODEL CONSTRUCTION
ANSA, CATIA, Fusion 360,
ANSYS-WorkBench

LANGUAGES
English (Native)
German (Proficient verbal & written)

EDUCATION

M.ENG CHEMICAL ENGINEERING
Stevens Institute of Technology, 2009

B.SC. CHEMICAL ENGINEERING
University of Pittsburgh, 2001

GERMAN LANGUAGE CERT.
University of Pittsburgh, 2001

RESIDENCES:
San Jose, CA
Clawson, MI

PORTFOLIO
Illustrative examples of projects and skills in action

HIGHLIGHTS

- Design, simulate, test and validate thermal endurance of electronics
- Automating processes scripted in Bash (Linux shell) and Powershell
- Analyzing 100+ hours of test data with Python

EXPERIENCES

SR THERMAL ANALYST — WISK (ALTEN, MOUNTAIN VIEW CA)
*Since Sep 2023. Contracted to develop battery in **eVTOL** aircraft.*

- Crafted Python libraries to analyze hundreds of test cases, tabulate results against requirements, automate production of thousand slide decks. Presented summary at Critical Design Review.
- Developed CFD model of battery module using STARCCM+ with electrical circuits. Model correlated against the test-data processed with my Python tools.

SR THERMAL ENGINEER — ENERVENUE (FREMONT CA)
Oct 2021 – Jul 2023. Produces battery energy storage for power grid.

- Generated thermal maps in Python to measure effect of Intake Louvers. These scripts and their visual outputs were adopted into dashboards made by data-analytic vendor.
- Devised CFD models containing hundreds of battery cells to study and predict performance from various proposed thermal solutions. Digital prototype computed predictions later confirmed with material rig.
- Validated power electronics, BMS control systems, battery cells and modules per UL 1973, 1998, 991; erected coffin sized conditioning chamber and other rigs.

THERMAL VALIDATION — MICROSOFT (ACALENT)
Nov 2020 – Jun 2021. Contracted by Actalent Services fka Aerotek.

- Conducted hardware testing of Microsoft's *Mixed Reality* device IVAS.
- Deployed Thermal Test Station at factory EOL (end of line). Reported issues found in the Test-Framework, later verifying resolution.

THERMAL CFD ENGINEER— ZOOX (FOSTER CITY, CA)
2019 – 2020. Developing thermal systems for autonomous vehicle.

- Reconstructed Vehicle Aero-Thermal model in STARCCM+. Presented CFD results to reveal impacts from grille and under-hood systems.
- CFD model and FEA-mesh based thermal models of on-board computer.

CFD ENGINEER — SF MOTORS (dba SERES, SANTA CLARA, CA)
2017 – 2019. Developing battery electric vehicle.

- Developed novel CFD methods to accurately predict heat through the Battery Module and validated by test rig with 40 thermocouples.
- CFD models provided insight how to balance coolant flow in the battery pack during five design phases. Hard-tool design reported acceptable temperatures.
- Served as interim Product Engineer for Vehicle Thermal Management (VTM) by initiating system attributes and engaging with suppliers.