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Some Technical Areas, Topics, and Equipment of Advanced Expertise

Mechanical Engineering

- **Thermal / Fluid Mechanics**
 - Aerodynamics
 - Heat exchangers
 - Combustion processes
 - CFD – ANSYS, NX, Flow Simulation (SolidWorks), Converge CFD, Star CCM+
- **Solid Mechanics**
 - Stress and structural analysis
 - FEA – SolidWorks, ANSYS, NX
 - NVH
 - Design of test rigs

Computer Science

- **Hardware**
 - Computer repair, assembly, upgrades
 - Network
- **Software**
 - OS – Windows, Linux
 - Computer languages/apps – C++, Python, HTML, CSS, JavaScript, Git*, GitHub*, MATLAB*, LabVIEW* (VIs, Veristand, Flexlogger)

Electrical Engineering

- **Communication**
 - Serial (RS-232 & RS-485)
 - CAN
 - Modbus – RTU * TCP
 - Ethernet
- **AC & DC Hardware**
 - Power supplies
 - AC motors / controllers – HV, 3-ph
 - DC motors / controllers – BLDC

Testing

- **Dynamometers**
 - DynoMite, AVL, Horiba, A&D, Powertest, LINK, Magtrol
 - Custom – Archer Aviation, Pivotal Aero, Wisk Aero
- **Ironbird**
 - Test integration – Archer Aviation, Elroy Air, Wisk Aero
- **Shakers, Thermal Chambers, Propeller Stands, X-Flow**
- **Instrumentation**
 - DEWESOFT, NI, HBK, MCC, Ipetronik
- **Test Planning**
- **Data Analysis**
- **Troubleshooting**