**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)

**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

**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**

**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

**Alexander Breves  
Some Technical Areas, Topics, and Equipment of Advanced Expertise**