JB

JOHN W. BENAC

428 Harborview Dr. SE #125
Bainbridge Island, WA 98110

john@johnbenac.com
281.532.5205

Portfolio:
johnbenac.com

Stratolaunch

Senior Systems Engineer, Advanced Programs **2017–Present**

- Supported capture, owned technical execution, & presented results for DoD study contract
- Used OTIS and STK regularly for mission design, trajectory optimization, and visualization
- Led capture & tech execution of NanoRacks/NASA collaboration of on-orbit LV repurposing
- Used CATIA to create physical configuration of facility footprints & payload accommodation
- Wrote, reviewed, & modified Level 0 requirements and use cases for Medium Launch Vehicle
- Performed Trade Studies for operational rules and physical configuration of new systems
- Defined conops & created visualizations of triple-launched Pegasus for DoD application

BlueGimbal

Independent Contractor Consultant **2014–2017**

- Developed CAD & physical prototypes for ULA's Vulcan engine Heat Shield vent
- Released engineering for upgraded avionics instalation of Atlas V payload adapter
- Collaborated w/ Stress & Production to optimize producible engine / fuel tank interface
- Specified, designed, built, tested, and verified a lifter for a lunar space elevator using CREO CAD and additive manufacturing; modeled lunar counterweight orbital dynamics in GMAT
- Led 4 industry partners to develop & sell space methane biomanufacturing concept to NASA
- Designed, constructed, tested thermal vacuum chamber gas-phase resin 3D printer
- Defined hardware development functionality of SNC Dream Chaser ECLSS across missions
- Coded Python script optimizing synchronous imaging constellations for STK and GMAT

The Boeing Company

Mechanical Engineer **2007–2014**

Houston, NASA Johnson Space Center

- Simulated, optimized, analyzed (w/ MATLAB,) visualized, & documented SLS trajectory
- Evaluate & contribute to specifications and requirements for new ECLSS system designs
- Supported proposals for Lunar Lander, Commercial Crew Capsule, Cryogenic Propellant Storage & Transfer, Space Launch System & Advanced Booster, ISS operations, & NIAC
- Staffed console at JSC ISS MCC for ECLSS maintenance, installation, & operations

Cleveland, NASA Glenn Research Center

- Defined ground segment of Cryogenic Propellant Storage & Transfer Demonstration Mission
- Led 5 experts to develop & propose in-space nuclear fuel production method to NASA
- Defined ground verification & testing regime for SLS fairing, including Plum Brook qual test
- Conducted trade studies of SLS cargo/crew/fairing/stage stack configurations

Renton, Boeing 737 Final Assembly

- Solved maintainability design flaw in exit door armrest design
- Coded data production schedule performance visualization reducing late submittals by 40%
- Conceived & deployed 737 exit row passenger egress envelope laser certification tool

University of Southern California

Astronautical Engineering, Masters

Coursework in engineering analysis, remote sensing, rocket propulsion, orbital mechanics, power systems, space weather and structural design and analysis

Stevens Institute of Technology

Space Systems Engineering, Graduate Certificate

Physically performed component, subsystem, system, and integrated cubesat verification. Coursework and practical projects in SMAD and Human SMAD as well as systems engineering

Brigham Young University

Manufacturing Engineering Technology, Bachelors Business Mgmt, Minor

Courses in lean manufacturing, six sigma, process simulation, CAD/CAM, rapid prototyping, automation, entrepreneurship, plastics and manufacturing processes

- Semester abroad at factories in China, Japan, Croatia, Serbia, and Slovenia

Code/CAD

STK, GMAT, OTIS, CORE, DOORS, Python, Matlab, PHP, MySQL, CATIA, Creo, SolidWorks, 2D