

CONTACT

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LANGUAGES

English (Bilingual)
French (Native).
Spanish (Limited working)
Italian - Hebrew (Elementary)

CERTIFICATIONS

Working at Heights Training
Aerial Lifts & Aerial Work Platforms
Fall Protection - Safety Training
Elevated Work Platform – Safety
Training

Airport Security Awareness Training Certificate

Emergency First Aid – CPR and AED

PUBLICATIONS

Emission Measurements of VariousBiofuels using a Commercial Swirl-Type Air-Assist Dual Fuel Injector

Comparative Study for Biodiesel Properties and Standards for Gas Turbine

JOACHIM AGOU

Mechanical/Aerospace Engineer | Entrepreneur |
Systems Integration & Project Management

Mechanical and aerospace engineer with 12+ years of experience leading multidisciplinary projects across aerospace, energy, and technology sectors. Strong background in systems integration, data acquisition, gas turbine testing, and space robotics. Entrepreneurial and adaptable, with experience in business operations, media production, and consulting. Proven ability to lead cross-functional teams through full project lifecycles and align technical solutions with business goals. Bilingual English/French; collaborative and results-driven.

KEY SKILLS

- Industry Knowledge: Systems Engineering & Integration, Project
 Engineering/Management, Aerospace & Mechanical Design, Business Strategy,
 Testing & Simulation
- Domain Expertise: Gas Turbines & Jet Engines (turbomachinery, propulsion),
 Data Acquisition Systems, Aerodynamics & Thermodynamics, Combustion &
 Emissions, Fluid Dynamics
- Tools & Technologies: Ansys (Fluent/CFX), SolidWorks, CATIA, AutoCAD;
 LabVIEW, iDDS; Python, MATLAB, VBA; Git, Linux/Unix; PTC Windchill PLM
- Interpersonal & Leadership: Team Leadership and Mentoring, Cross-functional Collaboration, Problem Solving, Training/Teaching, Presentation & Communication

EXPERIENCE

Accounting & Operations Administrator Sarah Mae Ives Social Media Inc. (Digital Marketing Firm)

- 2024 present | Vancouver (BC), Canada
- Financial Management Oversee daily financial operations, including invoicing 100+ clients, processing contractor payments (RBC PayEdge), and managing subscription transactions (Kajabi, Stripe, PayPal).
- Team Coordination Lead a cross-functional admin team (4–6 members, including tech/media support and community moderators); streamline workflows in collaboration with the CEO.
- Data Systems Designed a centralized Google Sheets CRM database to track student enrollments, subscriptions, payments, and sales, greatly improving reporting accuracy and data accessibility.
- Reporting & Analysis Produce weekly financial and performance dashboards to support strategic planning and data-driven decision making.
- **Customer Support** Resolve client access and payment issues via email and Slack; track and follow up on failed transactions to maintain account integrity and client satisfaction.
- Process Improvement Standardize payment and contract workflows to increase efficiency and ensure compliance with company policies.

Founder & Consultant — Independent Ventures

Entrepreneurship

July 2023 – Present (concurrent with other roles) | Victoria (BC) Canada

- Aerial Media Production Operate a drone-based imaging and video production service, delivering high-quality aerial photography and videography for clients. Notable projects include event coverage for the Fairmont Empress Hotel, University of Victoria, Christ Church Cathedral, and Alliance Française Victoria.
- Live Streaming Services Produce and manage live-stream broadcasts for events in remote locations across Vancouver Island. Develop customized streaming solutions to bridge distances for participants, and provide technical training to remote event staff.
- Engineering Consulting Advise industrial clients on the installation of large industrial ovens and the deployment of backup power systems in production plants. Deliver end-to-end solutions from conceptual design through implementation, focusing on efficiency, reliability, and safety.

Restaurant Operations Project Manager (Pre-Launch)

March 2024 - September 2024 | Victoria (BC), Canada

- **Pre-Launch Development** Led the full operational planning of a new vegetarian buffet concept, including site selection, lease negotiation, hiring, kitchen layout design, supplier sourcing, and permitting. Although the project was canceled before launch, all milestones were executed successfully up to pre-opening.
- Business & Compliance Strategy Developed the full business plan, pricing model, supplier network, and ensured
 regulatory compliance (FoodSafe certification, health inspections) while aligning the operation with farm-to-table
 and seasonal menu values.



Senior Systems/ Project Engineer — Robotics & Space Operations

February 2022 — February 2023 | Brampton (ON), Canada

- Systems Engineering Led end-to-end development of advanced on-orbit and planetary robotic systems (robotic arms and autonomous mechanisms for Mars/Lunar missions and the ISS). Managed requirements architecture, trade studies, detailed design, system integration, and on-orbit verification, ensuring alignment with mission objectives.
- **Project Management** Coordinated day-to-day execution across multi-disciplinary teams (mechanical, software, electrical, mission operations) to meet technical requirements, stay within budget, and adhere to schedule milestones.
- **Test & Verification** Developed and executed comprehensive test plans; oversaw integration and verification activities to validate system performance against stringent spaceflight criteria and client requirements.
- **Design Optimization** Applied design-to-cost and design-for-manufacture principles to streamline development, improve system robustness, and reduce integration time and cost.
- **Technical Documentation** Authored detailed system specifications, interface control documents, and analysis reports. Supported internal design reviews and customer deliverables, ensuring readiness for critical program milestones.
- Anomaly Resolution Diagnosed and resolved system anomalies by analyzing telemetry and performing rootcause analysis. Implemented corrective actions and supported mission operations to ensure successful system performance on orbit.



Gas Turbine Applications Engineer — Systems Integrator MDS Gas Turbine Engine Solutions

December 2013 — February 2022 | Ottawa (ON), Canada

• **Test Facility Development** – Led the design and deployment of custom gas turbine engine test facilities for aviation, industrial, and marine clients. Scope included data acquisition systems, instrumentation and controls, mechanical systems (including rotor-dynamics), aerodynamic and acoustic design, environmental compliance, as well as overseeing assembly, integration, and commissioning.

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- Project Highlights Delivered multiple turnkey test cells for Maintenance, Repair & Overhaul (MRO) and R&D programs worldwide. Projects included facilities for Air France–KLM (CFM56 and GE90 engine series), GKN Aerospace (Gripen fighter jet engines RM12/RM16), StandardAero (Pratt & Whitney JT15D series), Lockheed Martin (CF6 and CFM56 engines), Safran Aircraft Engines, and others. Also contributed to advanced R&D test sites such as Rolls-Royce's outdoor jet engine facility at NASA Stennis and Safran's LEAP-1A certification program.
- Technical Leadership Translated client requirements into detailed specifications and work plans. Managed
 cross-functional teams through design, procurement, construction, installation, and testing phases, ensuring
 seamless integration of all subsystems and compliance with project objectives.
- Client Engagement Represented MDS on international assignments for design reviews, on-site installations, and acceptance test procedures. Delivered tailored training to client engineers/operators and provided on-site support throughout commissioning to ensure successful handover.
- Data & Systems Expertise Customized data acquisition and control systems to meet specific client needs.

 Developed real-time data displays, automated test sequences, and comprehensive post-test analysis reports to enhance data accuracy and usability.
- **Documentation & Quality** Authored key technical documents (engineering specifications, design briefs, test plans) and enforced rigorous safety and quality standards (e.g., Lockout/Tagout procedures, ESD protection) throughout project execution.
- **Business Development** Supported the sales team in crafting technical proposals and bids, aligning MDS's solutions with client needs and industry trends to secure new contracts.

Combustion & Pollutant Emissions Engineer — Aerothermal Siemens Canada (formerly Rolls-Royce Canada) — Research and Technology

January 2013 — December 2013 | Montreal (QC), Canada

- Emissions Monitoring Operated advanced gas analyzers (FTIR, FID, O₂ CEMS) on gas turbine test beds to monitor and record pollutant emissions under various operating conditions. Improved data processing techniques to ensure accurate measurement of non-traditional emission species.
- **Biofuel Evaluation** Assessed alternative fuels (biodiesel and syngas blends) for their impact on combustion performance and emissions. Conducted tests to evaluate smoke production, lean blowout limits, and potential reductions in greenhouse gas emissions and operating costs.
- Combustion Modeling Developed computational fluid dynamics (CFD) models to simulate biofuel injection and combustion processes. Compared biofuel performance against conventional jet fuel baselines to identify benefits and trade-offs while maintaining required engine performance.

Graduate Research & Teaching Assistant — with Dr. Alain De Champlain Combustion Engineering Research Laboratory, Laval University

January 2011 — May 2013 | Quebec City (QC), Canada

- Biofuel Combustion Research Investigated the use of liquid and gaseous biofuels in gas turbine combustion.
 Designed and executed experiments using swirl combustors to measure combustion efficiency and emissions.
 Utilized advanced instruments such as FTIR spectroscopy for gas analysis and Particle Image Velocimetry (PIV) to study fuel spray characteristics (droplet size, velocity, penetration).
- Experimental Setup & Data Analysis Built and calibrated laboratory setups (fuel flow controllers, injectors, combustion chamber, sensors) and developed custom data acquisition programs (VBA/Excel) to collect and analyze large datasets. Optimized test procedures and compared results against theoretical models and empirical correlations.
- Mentoring & Teaching Supervised and trained junior researchers and summer interns on lab equipment and safety procedures. Assisted in teaching duties for undergraduate Mechanical Engineering courses (Thermodynamics), including leading lab sessions and grading reports. Ensured strict adherence to safety protocols (WHMIS, laser safety training) and documented research findings in technical reports and publications.

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ADDITIONAL PROJECTS & EXPERIENCE

- Independent Research Explored adaptive structures and FEA in fluid dynamics using ANSYS and Pro/E (Florida Tech, 2010).
- **Formula SAE** Led powertrain design and composite bodywork; developed team website (Florida Tech Motorsports, 2008–2009).
- Engineering Internship Maintained and repaired dental equipment (Prestige Dentaire, France, 2006).
- Military Volunteer Supported operations at Hatzerim Air Force Base with Israeli Army (Sar El Program, 2005).

EDUCATION

Laval University — M.Sc. Mechanical Engineering (ABD) | Quebec City, QC | Dec 2013

Focus: Combustion and alternative fuels research; completed advanced coursework in combustion, propulsion, and CFD.

Florida Institute of Technology — B.Sc. Mechanical Engineering | Melbourne, FL | May 2010 Honors: Best Senior Design Project (Formula SAE). Highlights: Extensive coursework in thermodynamics, fluid mechanics, heat transfer, and machine design.



SKEMA Business School — B.Sc. Mechanical Engineering | Sophia Antipolis, France | Jan 2007 Completed foundational engineering as part of dual-degree.



Carleton University — Mechanical Engineering Research | Ottawa, ON | Summer 2012 Conducted PIV/PDPA fluid dynamics testing.

PUBLICATIONS & AWARDS

- Co-author of two peer-reviewed conference papers on biofuel combustion and emissions, presented at the
 Combustion Institute Canadian Section meetings in 2012 and 2013. (Titles: "Emission Measurements of Various
 Biofuels using a Commercial Swirl-Type Air-Assist Dual Fuel Injector" (with presentation)" and "Comparative
 Study for Biodiesel Properties and Standards for Gas Turbine" (with presentation)")
- Best Mechanical Engineering Senior Design Project Florida Tech Motorsports (2009)

CERTIFICATIONS & TRAINING

- PMP® Exam Prep Seminar Project Management Professional preparation (2018)
- IT Risk & Cybersecurity Awareness Corporate training on information security (2019)
- Working at Heights Safety Training Certified for fall protection and height work (2019)
- Aerial Lifts & Work Platforms Certification Safe operation of aerial work platform equipment (2017)
- Standard First Aid & CPR/AED Red Cross certified, Level C (2021)
- WHMIS Workplace Hazardous Materials Information System training, certified (most recent 2022)
- Electrical Safety & Lockout-Tagout Hazardous energy control training (2022)
- ESD Control Training Electrostatic discharge prevention in electronics handling (2022)

ASSOCIATIONS

Member: ASME, SAE, PEGNL

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