CONTACT

1582 Winterport Way
Orleans, ON K4A 4C3
Canada

+1 (613) 413-5918
joachim@agou.ca
joachimagou@asme.org
http://joa.im

LANGUAGES

English (Bilingual)
French (Native).
Spanish (Limited working)
Italian (Elementary)
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 | Systems Integration
Project Engineering | Project Management

Experienced mechanical aerospace engineer with a combined 10+ years of dedication and proven ability in project engineering, product design/development, system engineering and integration, design supervision, and commissioning process.

Throughout my various positions and projects in the Aerospace and Energy industry, I always enjoyed forming trust-based relationships, solving complex customer problems, and leading teams to achieve challenging goals.

My guiding principles are simple: work hard, lead by example, and positively impact every professional and personal engagement.

EXPERIENCE

Senior Systems/ Project Engineer — Robotics & Space Operations
MDA
February 2022 — Present
Brampton (ON), Canada

- Performs systems engineering functions and acts as project authority for on-orbit and planetary robotic systems to conduct space operations.
- Lead and coordinate day-to-day execution of the multi-disciplinary project team, in support of the Program Manager, to meet technical, schedule requirements and budget constraints.
- Ensure ongoing project team coordination and communication, especially across disciplines, to ensure full buy-in to project objectives. Work to resolve any issues and ensure team buy-in.
- Develop high-level system requirements based on end-user needs and stated requirements.
- Apply engineering knowledge to large and complex projects in the design, development, test, integration, verification, validation and operation of complex, specialized products and technologies;
- Analyze and decompose systems-level requirements and allocate requirements and design margin across subsystem elements.
- Advocate for design to cost, design for test, and design for manufacture approach throughout the organization for effective productization of commercial space systems.
- Drive the development of system architecture, design and interface documentation.
- Develop and ensure proper documentation of technical and interface requirements throughout all project phases.
- Develop and ensure proper documentation of high-level system and subsystem design.
- Perform trade studies, analyses, and modelling to support requirements and system development.
- Create and maintain system budgets.
- Identify, assess and handle project risks.
- Provide technical leadership and review support.
- Develop test plans and procedures for verification and validation of system requirements.
- Coordinate and support integration and testing activities.
- Develop verification and test plans.
- Understand and assess design issues, determine appropriate resolutions, and work with the team to address them.
- Troubleshoot system behaviour anomalies, determine root cause, and the appropriate technical resolution.
- Review, analyze, and interpret telemetry from deployed systems with context and understanding of the systems development life cycle.

- Collaborate with project managers and business stakeholders to maintain project schedules and budgets while accomplishing project deliverables.
- Support project managers and the business development team with cost estimation and proposals.

Gas Turbine Applications Engineer — Systems Integrator

MDS Gas Turbine Engine Solutions

December 2013 — February 2022

Ottawa (ON), Canada

- Developed and deployed custom-built test facilities and test systems for aviation, industrial, and marine Gas Turbine (GT) engines, emphasizing the following areas:
  - Data Acquisition System (DAS) applications and software development
  - Instrumentation and control systems
  - Mechanical static and dynamic systems (including rotor-dynamics)
  - Aerodynamic and acoustics design
  - Environmental engineering
  - Production, assembly, integration, and test
  - Facilities planning and construction

- A few projects I worked on:

  Maintenance, Repair, and Overhaul (MRO) facilities:
  - ✓ Air France Industries KLM Engineering & Maintenance (France) — CFM56-5B, CFM56-7B, GE90-115B, GE90-94B, EA GP7200, GEnx-1B, GEnx-2B
  - ✓ GKN Aerospace (Sweden) — Volvo RM12 and RM16 (Gripen fighter jet)
  - ✓ Standard Aero (formerly Vector Aerospace) (Canada) — P&WC JT15D (multiple variants)
  - ✓ Lockheed Martin Commercial Engine Solutions (Canada) — CFM56-2A, CFM56-2B, CFM56-2C, CFM56-3, CFM56-5A, CFM56-5B, CFM56-5C, CFM56-7B, GE CF6-50C2
  - ✓ Safran Aircraft Engine Services Morocco (Morocco) — CFM56 (multiple variants)
  - ✓ Rolls-Royce (UK) — Consoles
  - ✓ GA Telesis Engine Services (Finland) — CFM56-5B, CFM56-7B, GE CF6-80C2

  Research and Development (R&D) facilities:
  - ✓ Rolls-Royce/ NASA Stennis Space Center (USA) — Outdoor Jet Engine Test Facility (development and certification testing)
  - ✓ Safran Aircraft Engines (formerly Snecma) (France) — CFM LEAP-1A (certification testing), CFM56 (endurance testing)
  - ✓ MAN Energy Solutions (Germany) — Industrial Gas Turbine MGT6000-2S, MG8000-1S
  - ✓ Siemens (Canada) — Industrial RB211
  - ✓ MDS AeroTest/ GLACIER Test Facility (Canada) — Emissions analyser system support
  - ✓ AVIC Commercial Aircraft Engines (ACAE) / Aeroengine Corporation of China (AECC) (China) — Fan, Booster, HPC, and Turbine (development testing)
  - ✓ Shanghai Electric Blower Works Co. (China) — Compressor (development testing)

- Interpreted contract technical requirements based on end-user needs and used these to develop project specifications, organize work breakdown structures, generate requirements matrices, and execute system-level project plans.
- Maintained accountability through design, procurement, manufacturing, assembly, installation, commissioning and testing activities by maintaining tight liaison throughout their completion.
- Developed execution strategies and communicated technical direction for the project's entire technical effort to achieve objectives defined by Management. Monitored activities and the

generation of deliverables required to achieve the objectives and ensured any roadblocks were resolved.
- Planned and managed the interfaces between the various subsystems that make up the project scope of work as well as between the various internal/external stakeholders on the individual subsystems.
- Monitored test systems schedule, budget, and technical compliance. Identified, assessed, analyzed, and supported the design team with any related risks, nonconformances, change orders, or concerns.
- Integrated multi-disciplinary knowledge of engineering to achieve the best overall product and service within the project's technical, cost and schedule constraints. Reviewed engineering team designs to ensure conformance and own multi-disciplinary.
- Participated in the vendor selection process and liaised with the procurement Point of Contact to monitor vendor progress.
- Planed the high-level engineering deliverable structure to support the smooth interface with the company Enterprise Resource Planning (ERP) system and procurement process.
- Liaised with the production planner to track, monitor and manage the progress of work orders for materials ad subcontracts through the ERP system.
- Traveled to customer sites worldwide to attend design reviews and monitor progress at the critical points of installation and commissioning.
- Configured Data Acquisition System (DAS), prepared post-analysis report templates, created real-time display interfaces and automated test sequences to meet customer needs.
- Defined the relevant engine and facility parameters to be measured and calculated by the Data Acquisition System (DAS) for engine turbine testing.
- Designed the customer's operations consoles and the integration of HMI to control and monitor the DAS and facility equipment.
- Developed verification and test plans. Wrote and ran in-house and on-site Acceptance Test Procedures (ATP) with customers to validate deliverables that comply with contract technical and commercial requirements.
- Prepared/Supervised and reviewed technical documents: Engineering Specifications (ES), Design Briefs (DB), drawings (GA), Purchase Requests (PR), and Engineering Coordination Memos (ECM) for data acquisition software components, control/test systems, console design, and customer support.
- Supported customer's operations of GT engine testing during and beyond the commissioning phase (Field Service Representative) for extended periods (6+ months). Troubleshoot system behaviour anomalies, determine root cause, and the appropriate technical resolution.
- Provided on-site and remote customer training in collaboration with Customer Service.
- Supported and prepared bids, proposals or tenders.

Combustion & Pollutant Emissions Engineer — Aerothermal
Siemens Canada (formerly Rolls-Royce Canada) — Research and Technology
January 2013 — December 2013
Montreal (QC), Canada

- Operated pollutants measurements with gas analyzers - FTIR/FID/O_2 CEMS (Continuous Emission Monitoring Systems) - on Gas Turbine testbeds.
- Improved emissions data processing and analysis of non-conventional pollutants emissions.
- Evaluated the combustion performance of liquid (biodiesel blends) and gaseous (syngas blends) biofuels in terms of smoke & emissions and lean blowout.
- Characterized promising liquid and gaseous novel biofuels for use in industrial Gas Turbines to reduce greenhouse gases and potentially operation costs.
- Developed a robust numerical model for biofuels injection and combustion prediction (CFD).
- Compared biofuels with baseline fuels to examine the benefits while maintaining an acceptable overall combustion performance.

Graduate Research & Teaching Assistant — with Dr. Alain De Champlain
Combustion Engineering Research Laboratory at Laval University
January 2011 — May 2013
Quebec City (QC), Canada

- Developed biofuels (liquid & gaseous) applications for Gas Turbine and aircraft propulsion.
- Operated combustion gas emissions monitoring of swirl combustor via FTIR (Fourier Transformation Infrared) – spectroscopy technology.
- Executed experimental tests of spray using PIV (Particle Image Velocimetry).
- Computed fluid dynamics prediction (CFD) of biodiesel spray, including swirler configurations, emphasizing penetration depth, droplet size, velocity, and spreading.
- Designed and assembled experimental apparatus, conducted experiments, trained, and supervised international summer interns.
- Hands-on work like soldering electrical circuits, wiring instruments, and assembling process equipment (mass flow controllers, piping, pumps, pressure chambers, heaters, valves, injectors, and heat exchangers).
- Deployed Data Acquisition System (DAS), calibrated instrumentation, performed tests and troubleshot problems.
- Compiled VBA program to collate and analyze a large volume of experimental data.
- Critically analyzed data after tests and correlated it with empirical evidence.
- Optimized the testing process to enhance data collection and established a benchmark for quantifying test results.
- Authored comprehensive technical reports to document test protocol, safety procedures, equipment laboratory, and findings.
- Successfully completed WHMIS and WORKSMART health and safety training programs.
- Prepared MAE Thermodynamics lectures, showed demonstrations of experiential exercises, supervised laboratory lectures, and evaluated laboratory reports.

Independent Study in Mechanical Engineering — with Dr. Razvan Rusovici
Florida Institute of Technology
January 2010 — June 2010
Melbourne (FL), USA

- Developed adaptive structures research and finite element analysis in fluid dynamics and acoustic via CAD and CAE software (Pro/E, ANSYS, and CFX).

Formula SAE Series — with Stephanie Hopper and Dr. Youngsik Choi
Florida Tech Motorsports (FIT)
November 2008 — May 2009
Melbourne (FL) & Michigan International Speedway (MI), USA

- Supervised the powertrain division, dealing with engine management, differential, simulation, testing and optimization via CAD and CAE software (SolidWorks, Cosmos Design, and ANSYS).
- Designed and fabricated the composite bodywork.
- Created the Florida Tech Motorsports website.

Service Engineer (intern)
Prestige Dentaire
June — July 2006
Nice, France

- Executed maintenance of dental equipment.
- Overhauled mechanical, plumbing, and electrical devices.

Military Experience (volunteer) — Sar El Program
Tsahal, Israeli Army Training Program
July — August 2005
Hatzerim Air Force Base, Israel

SKILLS & ABILITIES

- **Industry Knowledge:** System Integration, Systems Engineering, Project Engineering, Project Management, Aerospace Engineering, Business Strategy, Testing and Simulations

- **Domain Expertise:** Turbomachinery, Gas Turbines/ Jet Engines/Propulsion, Data Acquisition Systems, Aerodynamics, Thermodynamics, Combustion, Fluid Dynamics, Energy and Climate Change, Blockchain and Cryptocurrency Technologies

- **Tools & Technologies**
  - **Computational Fluid Dynamics (CFD):** Ansys Fluent, Ansys CFX, Ansys ICEM CFD (Mesh Generation), GAMBIT.
  - **Solid Modeling (CAD)/ Finite Element Analysis (FEA):** AutoCAD, SolidWorks, Pro/ENGINEER & Creo, CATIA, ANSYS Workbench Platform, ANSYS Parametric Design Language (APDL), Cosmos Design, Solid Concepts, CNC Software/Mastercam
  - **Data Acquisition (DAQ):** NI LabVIEW, proDAS and nxDAS (MDS Aero Support Corp), iDDS (instrumentation Data Distribution Service), LaVision FlowMaster (PIV)
  - **Development Tools:** MS Excel/VBA, Python, MATLAB, Java, SQL database, HTML CSS programming, XML, Apache, LaTex, Mediawiki
  - **Computer Skills:** Microsoft Office 365, Unix/Linux architecture (e.g CentOS, Red Hat, Ubuntu), Computer networking, G Suite, NetBeans, MATLAB, Mathcad, Maple, Adobe Photoshop, Adobe Lightroom, Adobe XD, Adobe Premiere Pro, computer virtualization (e.g. VMware), Wi-Fi security and penetration testing (e.g. Kali Linux), source code repositories (e.g. Git, Subversion) and bug tracking systems (e.g. Bugzilla, JIRA)
  - **Hardware skills:** Network configuration, Tech support and troubleshooting, WAN/LAN and routers
  - **Product Lifecycle Management (PLM):** PTC Windchill, Omnify Empower

- **Interpersonal Skills:** Problem Solving, Team Leadership, Engineering Management, Training, Teaching, Negotiation

- **Languages:** English (Bilingual), French (Native), Spanish (Limited working), Italian (Elementary), Hebrew (Elementary)

EDUCATION

Laval University
Master of Science (M.S.), Mechanical Engineering with Experimental Thesis. (ABD)
December 2013
Quebec City (QC), Canada

- Research Assistant (Combustion Laboratory).
- Teaching Assistant (MAE Thermodynamics).
- Laser Safety Certificate & WHMIS (Workplace Hazardous Materials Information System) qualified.
- Relevant courses completed:
  - Combustion Fundamentals (+CFD)
  - Internal Combustion Engines (+CFD)
  - Propulsion/ Air-breathing Engines (+CFD)
  - Data Acquisition and Signal Conditioning
  - Systems Optimization

- Control Systems

Carleton University
Summer Program, Mechanical Engineering
Summer 2012
Ottawa (ON), Canada

- Experimental tests of spray using PIV (Particle Image Velocimetry) and PDPA (Phase Doppler Particle Analyzer).

Florida Institute of Technology
Bachelor of Science, Mechanical Engineering *(transfer student)
May 2010
Melbourne (FL), USA

- Formula SAE member. Powertrain Division and Bodywork designer.
- Relevant courses completed:
  - Computer-Aided Engineering
  - Aerodynamics and Flight Mechanics
  - Design of Machine Elements
  - Mechanical Vibrations
  - Fluid Mechanics (+Lab)
  - Heating Ventilation and Air Conditioning (HVAC)
  - Mechanical Engineering Design 2
  - Thermal Systems Design
  - Thermodynamics 2
  - Heat Transfer (+Lab)
  - Control Systems
  - Electric & Electronics Circuits
  - Theory of Machines
  - Materials Science and Engineering (+Lab)
  - Calculus 3
  - Boundary Value Problems
  - Technical Communication
  - Engineering Economy & Planning
  - Music Theory

SKEMA Business School (formerly Euro-American Institute of Technology)
Bachelor of Science, Mechanical Engineering *(transfer student)
January 2007
Sophia Antipolis, France

- Relevant courses completed:
  - Thermodynamics 1
  - Aerodynamics
  - Statics & Dynamics
  - Deformable Solids
  - Physics 2 (+Lab)
  - Computer-Aided Design and Drafting
  - Software Development: Java & C++
  - General Chemistry
  - Ethics

* Florida Institute of Technology and SKEMA Business School are part of a dual-degree program and thus share a common graduation project.

Lycée Général et Technologique Les Eucalyptus
June 2004
Nice, France

❖ High school, Baccalauréat Science Stream (S), Specialization Physics & Chemistry, Option Engineering Sciences.

PUBLICATIONS / CONFERENCE PAPERS

- J. Agou, B. Paquet & A. deChamplain. "**Emission Measurements of Various Biofuels using a Commercial Swirl-Type Air-Assist Dual Fuel Injector**" (with presentation), *The Combustion Institute Canadian Section (CICS), Spring Technical Meeting, Université Laval, Quebec, Canada, May 13-16, 2013*

- M. Youssef, J. Agou, B. Paquet & A. deChamplain. "**Comparative Study for Biodiesel Properties and Standards for Gas Turbine**" (with presentation), *The Combustion Institute Canadian Section (CICS), Spring Technical Meeting, University of Toronto, Ontario, Canada, May 13-16, 2012*

CERTIFICATIONS & TRAINING

- **Aerial Lifts & Aerial Work Platforms [Mar 2017]**, Worksite Safety Compliance Center, Certificate 156AWP-64
- **Airport Security Awareness Training Certificate [Jun 2014]**, Butterfly Aero Training, License GB81580A20140623
- **AODA Customer Service Training [Sep 2014]**, MDS Gas Turbine Engine Solutions
- **AODA Training [Feb 2022]**, MDA
- **COVID-19 Employee Health and Safety Training [Jun 2020]**, MDS Gas Turbine Engine Solutions
- **Electrical Safety Awareness [Feb 2022]**, MDA
- **Elevated Work Platform - Safety Training**, CRS Contractors Rental Supply
- **Emergency First Aid – Cardiopulmonary resuscitation (CPR) and automated external defibrillator (AED)**, Canadian Red Cross, Jennifer Sybrandy, Certificate 30200842
- **ESD (Electrostatic Discharge) Control [Feb 2022]**, MDA
- **Fall Protection - Safety Training**, CRS Contractors Rental Supply
- **Instant HR - Workplace Hazards Training**, MDS Gas Turbine Engine Solutions
- **IT Risk and Cybersecurity Training for Employees [Aug 2019]**, MDS Gas Turbine Engine Solutions
- **Laser Safety Certificate [May 2011]**, Université Laval, License CAN/CSA E-60825-1:03; IEC 60825-1
- **Laser Safety Training [Feb 2022]**, MDA
- **Lockout/Tagout - Control of Hazardous Energy Training**, MDS Gas Turbine Engine Solutions
- **NEXUS [Jan 2019]**, Canada Border Services Agency
- **Occupational Health and Safety Awareness Training for Workers in Ontario**, MDS Gas Turbine Engine Solutions
- **PMP® Exam Prep Seminar [Nov 2018]**, Instructingcom, LLC, ID 109EPSWB
- **Standard First Aid and CPR level C and AED [Jul 2021]**, Ottawa Paramedic Service
- **Task Area Awareness [Feb 2022]**, MDA
- **WHMIS Training [Jan 2015]**, MDS Gas Turbine Engine Solutions
- **WHMIS (Workplace Hazardous Materials Information System)**, Université Laval
- **WHMIS 2015 New Hire Assessement [Feb 2022]**, MDA
- **Working at Heights Training [Aug 2019]**, LaborTek Personnel, WAH-34595
- **Working at Heights Training [Jul 2016]**, Safety Training Ottawa, WAH-34633

AWARDS

Engineering & Science Student Design Showcase
April 2009
Melbourne, FL

- Best Mechanical Engineering Senior Design Project award with Formula SAE Project (Florida Tech Motorsports).

GROUPS & ASSOCIATIONS

- **American Society of Mechanical Engineers (ASME)**, Member #102114839
- **Society of Automotive Engineers International (SAE)**, Member #6153388042 since 2009
- **Professional Engineers and Geoscientists Newfoundland & Labrador (PEGNL)**

INTERESTS

Soccer, Karate (purple belt), Windsurfing (purple sail), Wakeboarding, Cycling, Skiing.
Cinema, Music (DJ), Photography & Graphic Design, Traveling, High-Tech, Innovation.

REFERENCES

Jean-Luc Dicaire
Manager of Applications
MDS Aero Support Corporation, Suite 200, 1220 Old Innes Road, Ottawa, Ontario, K1B 3V3, Canada
Phone: +1 (613) 744-5794 x2210
Phone: +1 (438) 483-8082
E-mail: Jean-Luc.Dicaire@mdsaero.com

Qing Li
Chief Technical Support Engineer – Asia
MDS Aero Support Corporation, Suite 200, 1220 Old Innes Road, Ottawa, Ontario, K1B 3V3, Canada
Phone: +1 (613) 744-5794 x2284
E-mail: Qing.Li@mdsaero.com

Robert Schroeder
Chief Software Engineer
MDS Aero Support Corporation, Suite 200, 1220 Old Innes Road, Ottawa, Ontario, K1B 3V3, Canada
Phone: +1 (613) 744-5794 x2477
E-mail: Robert.Schroeder@mdsaero.com

William Corbett
Technical Director
MDS Aero Support Corporation, Suite 200, 1220 Old Innes Road, Ottawa, Ontario, K1B 3V3, Canada
Phone: +1 (613) 299-2968
E-mail: William.Corbett@mdsaero.com

Patrick Mullington
Systems Engineer
MDS Aero Support Corporation, Suite 200, 1220 Old Innes Road, Ottawa, Ontario, K1B 3V3, Canada
Phone: +1 (613) 744-5794 x2493
E-mail: Patrick.Mullington@mdsaero.com

Denis Stang
Test Systems Site Integrator
MDS Aero Support Corporation, Suite 200, 1220 Old Innes Road, Ottawa, Ontario, K1B 3V3, Canada
Phone: +1 (613) 744-5794 x2014
E-mail: Denis.Stang@mdsaero.com

Aleksander Wisniewski
Gas Turbine Applications Engineer
MDS Aero Support Corporation, Suite 200, 1220 Old Innes Road, Ottawa, Ontario, K1B 3V3, Canada
Phone: +1 (514) 707-0724
E-mail: Aleksander.Wisniewski@mdsaero.com

Dionne Barwise
Director of Measurement Engineering
MDS Aero Support Corporation, Suite 200, 1220 Old Innes Road, Ottawa, Ontario, K1B 3V3, Canada
Phone: +1 (613) 744-5794 x2230
E-mail: Dionne.Barwise@mdsaero.com

Michael Ambacher
Flight Simulator Test Specialist
CAE Inc., 8585 Chem. de la Côte-de-Liesse, Saint-Laurent, QC H4T 1G6
Phone: +1 (514) 627-9005

Mina Youssef
Test Engineer
Nova Bus - Volvo, 1000 Bd Industriel, Saint-Eustache, QC J7R 5A5, Canada
Phone: +1 (514) 967-4100

Dr. Alain de Champlain
Director & Professor, Head of Combustion Research Laboratory.
Department of Mechanical & Aerospace Engineering
Laval University, 1065 Avenue de la Médecine, Quebec City, Quebec, G1V 0A6, Canada
Phone: +1 (438) 656-2131 x2198
E-mail: alain.dechamplain@gmc.ulaval.ca

Bernard Paquet
Research Engineer, Supervisor of Combustion Research Laboratory.
Department of Mechanical & Aerospace Engineering
Laval University, 1065 Avenue de la Médecine, Quebec City, Quebec, G1V 0A6, Canada
Phone: +1 (438) 656-2131 x6809
E-mail: bernard.paquet@gmc.ulaval.ca

Dr. Robert Gordon
Combustion Specialist, Team Leader of Research & Technology division.
Rolls-Royce Canada, 9500 Côte de Liesse, Montreal, Quebec, H8T 1A2, Canada
Phone: +1 (514) 636-0964 x7316
E-mail: robert.gordon2@rolls-royce.com

Dr. Yan Grasselli
Academic Head of Bachelor programs and Head of the Environmental and Marine Sciences Bachelor department.
SKEMA Business School, 60 rue Dostoïevski, 06902 Sophia Antipolis, France
Phone: +33 (0) 4 93 95 44 03
E-mail: yan.grasselli@skema.edu

Personal references available upon request.