Alexander Yun, PhD, Dr.Ing., P.Eng.

SUMMARY OF QUALIFICATIONS
15+ years of experience in the field of Mechanical Engineering
Expert level in applied Computational Fluid Dynamics (CFD), structural analysis (FEM)
Proven results in R&D of gas turbine engines and test facilities, HVAC, home appliances and
   medical equipment
Professional communication skills include fluency in English, German, Russian, French and
 Korean
Computer skills include: - CFD: CFX, Fluent, Polyflow, Icepack, FlowTherm;
                         - Structural: ANSYS Mechanical, ANSYS Dynamical;
                         - Mesh: Ansys Mesh, ICEM-CFD, Fluent Mesh, Turbo Mesh;
                         - CAD: UG, Design Modeler, Space Claim;
                         - Other: Workbench, Fluid Structure Interaction;
                         - Computer languages: Fortran, C/C++, VBA, HTML, PHP;
                         - OS: Unix, Linux and MS Windows.

PROFESSIONAL EXPERIENCE

Senior Engineer   **2018-present**
   MDS Aero, Ottawa, Canada, www.mdsaero.com
      R&D of gas turbine engines test facilities;
      1D and 3D modeling.

Principal Engineer   **2013-2018**
   Samsung Electronics, Suwon, S. Korea, www.samsung.com
      R&D of medical equipments;
      Simulation of heat and mass transfer (CFD), mechanical analysis and design
      (FEM);
      Providing experiments.

Senior CFD Analyst   **2010-2013**
   Simutech Group, Toronto/Montreal, Canada, www.simutechgroup.com
      Simulation of flows with combustion, heat & mass transfer (CFD);
      Consulting, teaching and support in the field of CFD.

Principal Engineer   **2008-2010**
   NPO "Saturn", Moscow, Russia, www.npo-saturn.ru
      R&D of combustion chambers of Gas Turbine Engines (aircraft & power plant);
      Modeling of flows with combustion, heat & mass transfer (CFD);
      Optimization of numerical simulations;
      Providing lectures for engineers (CFD).

Senior Engineer   **2006-2008**
   LG Electronics, Changwon, S. Korea, www.lge.com
      R&D of home appliances;
      Simulation of combustion processes in gas range systems (CFD);
      Providing experiments.

Mechanical Engineer   **2005-2006**
   LANTEP, Moscow, Russia
      R&D of HVAC systems in passenger carriages;
      Analyzing of air motion in the passenger carriages (CFD);
      Software development for pressure drop calculation in pipe systems (VBA);

Scientific Researcher (PhD in Mechanical Engineering)/Mechanical Engineer   2002-2005

TU, Darmstadt, Germany, www.ekt.tu-darmstadt.de

R&D of combustion chambers of Gas Turbine Engines;
Research of flows with combustion, heat & mass transfer (CFD);
Development of new turbulent, combustion, heat & mass transfer models (CFD);
Software development for modeling turbulent flows (Fortran/C).

EDUCATION
PhD in Mechanical Engineering (Gas Turbine Engines & Power Plants)   1999-2002

TU, MAI, Moscow, Russia, www.mai.ru

Research of thermo-dynamical processes in power plants based on gas turbine engine;
Development of 1D models for compressor, combustion chamber, turbine, after burner and nozzle of gas turbine engines;
Analysis of control system of power plants based on gas turbine engine.

Mechanical Engineer Diploma   1993-1999

TU, MAI, Moscow, Russia, www.mai.ru

Diploma with honor, cumulative GPA: 4.84 / 5.0.

AWARDS & PATENTS
Awarded 2nd prize (team) of World LG contest for new concept of gas range system   **2007**
Honored (team) for development of high performance combustion chamber   **2009**
Patents: US2016/0235377 A1, US2016/0235378 A1, etc. (7+ patents)   **2006-2018**

Comprehensive projects
Development of altitude test facility for gas turbine engine (MDS Aero/Hanwha, Canada/S. Korea).

Development of perspective Computed Tomography: Structure and cooling performance (Samsung, S. Korea).

Simulation and design of exhausted system of gas turbine engine (Simutech/GE, Canada/USA).

Development of low emission combustion chamber of stationary gas turbine engine (Saturn, Russia)

Research of unsteady flows in combustion chambers of gas turbine engines (TU, Germany).

PUBLICATIONS (not all, downloadable on www.yun.su)

A.Yun	*Computational Fluid Dynamics: from zero to guru. Book, ~600 pages. Create Space, US, 2017 (in English).*
A.Yun	*Research of flow and structural analysis. Book, 427 pages, 3rd edition. «LENAND», Moscow, Russia, 2013. (in Russian)*
V.Bakulev, B.Krilov, A.Yun	*The calculation of attitude performance of gas turbine engines. School book, 60 pages. "MAI", Russia, 2000 (in Russian).*

HOBBY
Taekwondo: vice-champion of Russia-CISM (97,98,99), champion of Germany-DHU (04).
Programming: calculation of Gas Turbine Engine performance, network calculation (C++/Qt).