

# YANN D. STAELENS, Ph.D.

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## EDUCATION

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*University of Southern California, Los Angeles, CA*

August 2002 – October 2007

**Ph.D. in Aerospace Engineering**, Full Scholarship, Dean's list

**M.S. in Aerospace Engineering**, Full Scholarship, Dean's list

*École Polytechnique de Montréal, Montreal, Canada*

August 2001 – June 2002

**B.S. in Mechanical Engineering**, Exchange Student

*Université Libre de Bruxelles, Brussels, Belgium*

September 1997 – June 2002

**B.S. in Mechanical Engineering**, Graduated with honors

## ACADEMIC POSITIONS

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*University of Southern California, Los Angeles, CA*

**Associate Professor of Engineering Practice**

August 2020 – Present

• Computer Aided Analyses for Aero-Mechanical Design (AME 308)

➤ Continuously developed classroom materials to familiarize future generations of aerospace and mechanical engineers to concepts of solid modeling, finite element analysis and dynamic analysis using latest CAE software packages including NX with NX Simulation.

• Senior Design Laboratory (AME 441a)

➤ Introduced future aerospace and mechanical engineers to the ideas of experimental work and the responsibilities of an industrial research project in areas such as fluid dynamics, structural mechanics, dynamic control, aircraft design, etc.

• Formula SAE / USC Racing Faculty Advisor / USC Formula Electric Faculty Advisor

➤ Advised and mentored engineering students of all level on design, build, integration and test of the USC FSAE internal combustion and electric race car design using procedures and techniques applied in the industry.

➤ Implemented rigorous review process of the designs with industry experts

➤ Organized networking events for USC Racing team members with companies like SpaceX, Tesla, Boeing, Northrop Grumman, Lockheed Martin, etc.

**Senior Lecturer**

August 2015 – August 2020

• Computer Aided Analyses for Aero-Mechanical Design (AME 308)

➤ Continuously developed classroom materials to familiarize future generations of aerospace and mechanical engineers to concepts of solid modeling, finite element analysis and dynamic analysis using latest CAE software packages including NX with NX Simulation and Solid Edge.

• Strength of Materials (AME 204)

➤ Introduced the principles of strength of materials to sophomore engineering students as part of their aerospace and mechanical engineering curriculum.

• Formula SAE / USC Racing Faculty Advisor / USC Formula Electric Faculty Advisor

➤ Advised and mentored engineering students of all level on design, build, integration and test of the USC FSAE race car design using procedures and techniques applied in the industry.

➤ Implemented rigorous review process of the designs with industry experts

➤ Organized networking events for USC Racing team members with companies like SpaceX, Tesla, Boeing, Northrop Grumman, Lockheed Martin, etc.

**Lecturer**

August 2011 – August 2015

• Computer Aided Analyses for Aero-Mechanical Design (AME 308)

➤ Continuously developed classroom materials to familiarize future generations of aerospace and mechanical engineers to concepts of solid modeling, finite element analysis and dynamic analysis using latest CAE software packages including Solid Works and Solid Edge.

• Senior Design Laboratory (AME 441a)

➤ Introduced future aerospace and mechanical engineers to the ideas of experimental work and the responsibilities of an industrial research project in areas such as fluid dynamics, structural mechanics, dynamic control, aircraft design, etc.

• Formula SAE / USC Racing Faculty Advisor

➤ Advised and mentored engineering students of all level on design, build, integration and test of the USC FSAE race car design using procedures and techniques applied in the industry.

➤ Implemented rigorous review process of the designs with industry experts

➤ Organized networking events for USC Racing team members with companies like SpaceX, Tesla, Boeing, Northrop Grumman, Lockheed Martin, etc.

## Part-time Lecturer

August 2008 – August 2011

- Computer Aided Analyses for Aero-Mechanical Design (AME 308)
  - Continuously developed classroom materials to familiarize future generations of aerospace and mechanical engineers to concepts of solid modeling, finite element analysis and dynamic analysis using latest CAE software packages including Solid Works and Solid Edge.
- Strength of Materials (AME 204)
  - Introduced the principles of strength of materials to sophomore engineering students as part of their aerospace and mechanical engineering curriculum.
- Mechoptronics Laboratory (AME 341a&b)
  - Taught principles of mechanical, optical and electrical engineering to junior engineering students in a combination that reflects the way in which modern devices almost always operate in combination with technical communications.

## ACADEMIC SERVICES

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### University of Southern California, Los Angeles, CA

#### Viterbi School of Engineering

- Engineering Faculty Council (EFC) – AME Representative June 2020 - present
- CET Faculty Fellow August 2020 - present
- Baum Makerspace Committee Summer 2018 - present
- Baum Makerspace Fundraising campaign Fall 2018 - present
- Viterbi Graduation Ceremony Marshall May 2019
- Helped secure an ANSYS site license for Viterbi School of Engineering Fall 2018
- Represented Viterbi at 2019 Northrop Grumman Employee and Family Day, El Segundo CA October 2019

#### AME Department

- Faculty Advisor USC Racing Fall 2014 - present
- Faculty Advisor USC Formula Electric Fall 2019 - present
- UG Awards Committee Fall 2020 - present
- RTPC Promotion Committee Fall 2020 - present
- Faculty Advisor ENGR 395 (Cooperative Education Work Experience), AME 490 (Directed Research) Fall 2019
- NTT Merit Review Committee Fall 2017 - Spring 2018
- AME Faculty-Staff Committee Fall 2018 - Spring 2019
- Setup of design space for USC Racing, USC Solar Car and USC Hyperloop in Lot 1 Parking lot Summer - Fall 2017
- Setup of design space for USC Racing, USC Solar Car in RRB 109 Fall 2018
- Organized AME Tailgate for students, parents, faculty and staff during Parents Weekend 2018, 2019
- Organized 2 ANSYS workshops for AME students Spring 2018
- Organized USC Racing Friends and Family Day to recognize team sponsors 2016, 2017, 2018, 2019
- Organized USC Racing Design Reviews (PDR & CDR) with guests from industry Every Fall since 2014
- Represented USC at the 2019 Fletcher Jones 4<sup>th</sup> of July fundraiser for USC Racing, Newport Beach CA July 2019
- Represented USC at the 2019 Supercars by the Sea fundraiser for USC Racing, Huntington Beach CA October 2019
- Letter of recommendations for AME student's graduate school applications, job application and green card applications
- Character witness interviews for security clearance applications of former AME students

## USC Racing FSAE Competition Attendance and Results

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- FSAE Lincoln 2013, Lincoln NE 48<sup>th</sup> overall finish
- FSAE Lincoln 2014, Lincoln NE 45<sup>th</sup> overall finish
- FSAE Lincoln 2015, Lincoln NE 40<sup>th</sup> overall finish
- FSAE Lincoln 2016, Lincoln NE 27<sup>th</sup> overall finish
- FSAE Lincoln 2017, Lincoln NE 24<sup>th</sup> overall finish
- FSAE Lincoln 2018, Lincoln NE 12<sup>th</sup> overall finish
- FSAE Lincoln 2019, Lincoln NE 32<sup>nd</sup> overall finish
- SoCal Shootout 2019, Riverside CA 1<sup>st</sup> overall finish

## Honors & Awards

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- 2020 Outstanding Educator Award – Orange County Engineering Council

## **OTHER WORK EXPERIENCE**

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### ***Consulting / Design Engineer***

*Dzyne Technologies, Irvine, CA*

December 2017 – Present

- Lead design engineer for new eVTOL program.
- Lead designer for novel personal transportation system.
- Mentored junior level engineers on proper design practices when creating new component for novel personal transportation system.
- Established System Requirement Specification (SRS) documents for novel personal transportation system.
- Prepared and reviewed GD&T drawings of components before being sent for manufacturing.

*Mooney International, Chino, CA*

August 2014 – August 2017

- Lead designer for door and windscreen package for new Mooney M10 general aviation aircraft.
- Mentored junior level engineers on proper design practices when creating new components for a general aviation aircraft.
- Oversee interior design (e.g. cabin arrangement, seats and restraints) in accordance with ergonomics, visibility & HIC requirements.
- Tracked and managed FAR23 regulations for interiors, doors and windscreen components throughout design process.

*Dzyne Technologies, Irvine, CA*

March 2014 – August 2014

- Designed a door package and windscreen package for the new Mooney M10 proof of concept (POC).

*Tom Meade Cars, Los Angeles, CA*

July 2012 – July 2013

- Designed drivetrain parts and custom dashboard instruments of supercars using Solid Works.

*Kelly Slater Wave Company, Los Angeles, CA*

July 2009 – March 2010

- Implemented and programmed (Labview) controlling devices that create the perfect artificial wave for professional surfers.

### ***University of Southern California, Los Angeles, CA – Wind Tunnel Facility Manager***

January 2004 – August 2008

- Primary operator of the USC Moving Ground Plane Wind Tunnel for the Aerospace and Mechanical Engineering department.
- Improved flow quality of the test section of the USC Moving Ground Plane Wind Tunnel.
- Designed and implemented an electromechanical controller for the moving ground plane so that ground effect studies can be performed at the facility.
- Conducted studies for third party company (Teledyne, Inc.) and other departments.
- Advised and mentored students when performing wind tunnel tests for senior projects.

## **RESEARCH EXPERIENCE**

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### **Ph.D. Thesis – Study of Belly-Flaps to Enhance Lift and Pitching Moment**

January 2003 – October 2007

#### **Coefficient of a Blended-Wing-Body Airplane in Landing and Takeoff Configuration**

- University of Southern California, Los Angeles, CA
- Sponsored by NIA (National Institute of Aeronautics) under NASA Cooperative Agreement NCC-1-02043

### **B.S. Thesis – Improvement of the Darrieus Rotor Using the CARDAAV program**

August 2001 – June 2002

- École Polytechnique de Montréal, Montreal, Canada

## **CERTIFICATES**

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Engineering-In-Training Certification (EIT 149799); State of California; April 2013.

Certified Solidworks Professional (Certificate ID: C-UV4UK4UW4T); Dassault Systems Solidworks Corporation; March 7<sup>th</sup> 2012.

Certificate of achievement (ADM701) Basic ADAMS Full Simulation Training; MSC Software Corporation; Santa Ana, CA; June 20<sup>th</sup> – 24<sup>th</sup> 2011.

Certificate of achievement (PAT301) Computer Based Modeling for Design & Analysis with Patran Training; MSC Software Corporation; Santa Ana, CA; August 8<sup>th</sup> – 12<sup>th</sup> 2011.

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**SKILLS**

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*Design and Analysis:* NX & NX Simulation, 3DEXPERIENCE, Catia v5, Solid Edge, Solid Works, ADAMS, PATRAN  
*Languages:* Matlab, Labview, Visual Basic, FORTRAN  
*Electronics:* DAQ-cards, Strain gauges, Optical sensors, Force balances, Linear actuators  
*Machinery:* CNC-hotwire, Drill-press, Mills, Bandsaws  
*Fabrication:* Composite materials, Welding, Soldering  
*Commercial Software:* Excel, Powerpoint, Word, MS-Project

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**PUBLICATIONS**

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AIAA-2008-0297 Computer Simulation of Landing, Take-off and Go-around of a Blended-Wing-Body Airplane with Belly-flaps;  
Y. Staelens, M. Page, R. Blackwelder; Reno, NV; January 2008

AIAA-2007-4176 Study of Belly-flaps to Enhance Lift and Pitching Moment Coefficient of a BWB-Airplane;  
Y. Staelens, M. Page, R. Blackwelder; Miami, FL; June 2007

AIAA-2007-0068 Novel Pitch Control Effectors for a BWB-Airplane in Takeoff and Landing Configuration;  
Y. Staelens, M. Page, R. Blackwelder; Reno, NV; January 2007

AIAA-2003-0524 A Straight-Bladed Variable-Pitch VAWT Concept for Improved Power Generation;  
Y. Staelens, F. Saeed, I. Paraschivoiu; Reno, NV; January 2003

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**MEETINGS AND EXHIBITS**

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2019 ASEE PSW – CalState LA: Los Angeles, CA; April 4 – 6<sup>th</sup> 2019

2019 SAE WSX – Detroit, MI; April 9 – 11<sup>th</sup> 2019

46<sup>th</sup> AIAA Aerospace Sciences Meeting and Exhibit; Reno, NV; AIAA-2008-0297 January 7 – 10<sup>th</sup> 2008

25<sup>th</sup> AIAA Applied Aerodynamics Conference; Miami, FL; AIAA-2007-4176 June 25 – 28<sup>th</sup> 2007

45<sup>th</sup> AIAA Aerospace Sciences Meeting and Exhibit; Reno, NV; AIAA-2007-0068 January 8 – 11<sup>th</sup> 2007

41<sup>st</sup> AIAA Aerospace Sciences Meeting and Exhibit; Reno, NV; AIAA-2003-0524 January 6 – 9<sup>th</sup> 2003

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**PROFESSIONAL MEMBERSHIPS**

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American Institute of Aeronautics and Astronautics (AIAA) 2002 – present

American Society for Engineering Education (ASEE) 2013 – present

Society of Automotive Engineers (SAE International) 2013 – present

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**LANGUAGES**

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English, French, Dutch

**CITIZENSHIP** U.S. Citizen

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**REFERENCES**

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Available upon request