



## Summary

- More than 13 years of experience in teaching and research.
- More than 4 years of experience in engineering consultation.
- Graduated of college which [ranks first in Canada](#) for the scope of its engineering research.
- Developed a new method for diagnosis using data driven method.
- Developed a new machining process control technique.
- Majored in equipment diagnostics and prognostics.
- Won the first prize of graduate student paper competition in 2014.
- Developing innovative solutions to mechanical problems.

## Education

- Nov -2014 **Ph.D. in Industrial Engineering**, Polytechnique, Montreal University, Canada.  
Dec-2007 **M.Sc. in Mechanical Engineering**, Helwan University, Cairo, Egypt  
May-2001 **B.Sc. in Mechanical Engineering** (First Class Honor), Helwan University, Cairo, Egypt

## Research Area

*Mechanical & Industrial Engineering* Optimization of maintenance policies, equipment diagnostics and prognostics, condition monitoring and fault diagnosis, engineering management, machining process control, machining metal matrix composites, knowledge based training.

## Publications

### ▪ Journal papers

1. **Yasser Shaban**, Mouhab Meshreki, Marek Balazinski, Soumaya Yacout, Helmi Attia, *Process Control Based on Pattern Recognition for Routing Carbon Fiber Reinforced Polymer*, *Journal of intelligent manufacturing*. DOI: 10.1007/s10845-014-0968-6
2. **Yasser Shaban**, Maryam Aramesh, Soumaya Yacout, Marek Balazinski, Helmi Attia, Hossam Kishawy, *Optimal replacement times for machining tool during turning TiMMCs under variable machining conditions—Journal of Engineering Manufacture*. DOI: 10.1177/0954405415577591
3. **Yasser Shaban**, Soumaya Yacout, Marek Balazinski, *Tool wear monitoring and alarm system based on pattern recognition with Logical Analysis of Data—Journal of manufacture science and engineering*, DOI: 10.1115/1.4029955
4. Maryam Aramesh, **Yasser Shaban**, Soumaya Yacout, Helmi Attia, Hossam Kishawy, Marek Balazinski, *Survival life analysis applied to tool life estimation with variable cutting conditions when machining titanium metal matrix composites (Ti-MMCs)*. *journal of Machining Science and Technolog*, DOI:10.1080/10910344.2015.1133916
5. **Yasser Shaban**, Maryam Aramesh, Soumaya Yacout, Marek Balazinski, Helmi Attia, Hossam Kishawy, *Identifying optimal replacement times for cutting tools- SEM SAYS, Industrial Management magazine*.
6. **Yasser Shaban**, Soumaya Yacout, Marek Balazinski, *Cutting tool wear multi-class detection using logical analysis of data— journal of Machining Science and Technology*.
7. **Yasser Shaban**, Soumaya Yacout, *Predicting the remaining useful life of a cutting tool during turning titanium metal matrix composites*. *Journal of Engineering Manufacture*. doi:10.1177/0954405416654184
8. Walid Nassar, **Yasser Shaban**, *Study Of Solar Charging Facility For Electric Vehicles In Edinburgh*, *Intrnational Journal of Scientific & Technology Research*, ISSN 2277-8616

### ▪ Conference papers

1. **Yasser Shaban**, Maryam Aramesh, Soumaya Yacout, Marek Balazinski, Helmi Attia, Hossam Kishawy, *Optimal replacement of tool during turning titanium metal matrix composites*, *Proceedings of the 2014 Industrial and Systems Engineering Research Conference, Montréal, Canada*.

2. Maryam Aramesh, **Yasser Shaban**, Marek Balazinski, Helmi Attia, Hossam Kishawy, Soumaya Yacout, Survival life analysis of the cutting tools during turning titanium metal matrix composites (Ti-MMCs), 6th CIRP International Conference on High Performance Cutting, California, USA, HPC2014, DOI: 10.1016/j.procir.2014.03.047
3. Maryam Aramesh, **Yasser Shaban**, Marek Balazinski, Helmi Attia, Hossam Kishawy, Tool life prediction via survival life analysis of the cutting inserts during turning titanium metal matrix composites (Ti-MMCs), 3rd International Conference on Virtual Machining Process Technology, VMPT 2014, Calgary, Canada.
4. **Yasser Shaban**, Soumaya Yacout, Marek Balazinski, Tool Replacement Based On Pattern Recognition with Logical Analysis of Data-DOI: [10.1109/RAMS.2015.7105175](https://doi.org/10.1109/RAMS.2015.7105175), the Annual Reliability and Maintainability Symposium, 2015, Florida, USA.
5. **Yasser Shaban**, Mouhab Meshreki, Marek Balazinski, Soumaya Yacout, Helmi Attia, Diagnosis of machining outcomes based on machine learning with Logical Analysis of Data, the 5th International Conference on Industrial Engineering and Operations Management (IEOM2015), P.341-348, DOI: [10.1109/IEOM.2015.7093752](https://doi.org/10.1109/IEOM.2015.7093752).
6. **Yasser Shaban**, Soumaya Yacout, Identifying Optimal Intervene Hazard for Cutting Tools Considering Cost-availability Optimization- Accepted in the 6th International Conference on Industrial Engineering and Operations Management (IEOM2016), Malaysia.
7. **Yasser Shaban**, Jose Luis Gonzalez Rubio, Soumaya Yacout, Visual data mining of faults in machining process based on machine learning- Accepted in the 6th International Conference on Industrial Engineering and Operations Management (IEOM2016), Malaysia.
8. **Yasser Shaban**, Soumaya Yacout, Cutting Tool Remaining Useful Life during Turning Metal Matrix Composite— the Annual Reliability and Maintainability Symposium, 2016, USA. DOI: [10.1109/RAMS.2016.7448001](https://doi.org/10.1109/RAMS.2016.7448001)
9. Soumaya Yacout, **Yasser Shaban**, “L'analyse des données en maintenance : comment améliorer vos programmes d'entretien et augmenter la fiabilité de vos équipements?”, Maintenance et fiabilité industrielles 7e édition, la événement les affaires, Montréal, 2015.
10. **Yasser Shaban**, Soumaya Yacout, Marek Balazinski, Diagnosis of machine tools using Knowledge Extraction and data analysis, 62nd CASI Aeronautics Conference and AGM 3rd GARDN Conference, aero2015, Montreal, Canada.
11. Mohab Aly, **Yasser Shaban**, Soumaya Yacout, Analysis of Massive Industrial Data using MapReduce Framework for Parallel Processing- DOI: [10.1109/RAM.2017.7889681](https://doi.org/10.1109/RAM.2017.7889681) the Annual Reliability and Maintainability Symposium, 2017, USA.
12. **Yasser Shaban**, Soumaya Yacout, Mohab Aly, Condition-based reliability prediction based on logical analysis of survival data — DOI: [10.1109/RAM.2017.7889739](https://doi.org/10.1109/RAM.2017.7889739) the Annual Reliability and Maintainability Symposium, 2017, USA.

## Patent

**Yasser Shaban**, Soumaya Yacout, Marek Balazinski, “Process Controller and Alarm System for Machining Operations (Pro-CASMO)” under administrative processing at École Polytechnique toward applying for a patent

## Teaching Experience

Maintenance planning, reliability Engineering, manufacturing and metal cutting, machine design, stress analysis, mechanics of materials, mechanical vibration, system dynamics and control, theory of machine, mechanics and dynamics, Engineering drawing, and technical English.

## Graduate Courses

**McGill University:** mathematical programming, machine learning

**Concordia University:** advanced probability and statistics, Pattern recognition

**Montreal University:** machining of aerospace materials, maintenance, reliability engineering, Scientific and technical writing, research methodology, industrial engineering seminars.

**Helwan University:** mechanical vibration, and numerical analysis, advanced engineering material, computer aid design, tribology, engineering measurements, optimum design for mechanical components, analytical methods for mechanical engineering.

## Work Experience

### ▪ Jan 1, 2015

Assistant Professor

Helwan University, Cairo, Egypt

- Teaching courses such as: machine parts design, mechanics of materials, mechanical vibration, system dynamics and control, theory of machine, mechanics and dynamics.

### ▪ May 1, 2012 – Dec 30, 2014

Ph.D. candidate, Teaching Assistant

## **Polytechnique, Montreal University, Canada.**

- Teaching courses such as: Maintenance and Reliability Engineering
- Responsible in Laboratory for Physical Asset integrity Management (L-PAIM).

### ▪ **April 1, 2007– March 30, 2012 (Part time)**

#### **Senior Mechanical Engineer**

#### **Egyptian Group for Engineering Consultation (EGEC),**

- Has a strong academic background in stress analysis addition to professional experience as a consultant and designer.
- Was promoted within one year, to lead a project group of firefighting systems and piping systems of several projects. Among these projects are: Cities infrastructure, museums, high rise buildings, offices buildings, residential buildings, hotels, medical centers, university campuses, road tunnels, supermarkets, factories, and malls.

### ▪ **June 22, 2002 – April 20,2012 (Full time)**

#### **Assistant lecturer**

#### **Faculty of Engineering, Helwan University**

- Teaching courses such as: machine parts design, mechanics of materials, mechanical vibration, system dynamics and control, responsible of the stress and strain labs.

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## **International Projects**

### ▪ **2016**

#### **Development Specialist [Click here](#)**

#### **Pratt & Whitney Canada/ Montreal University, Canada/.**

- Working on a project related to Pratt & Whitney Canada (PWC) which is a world leader in aerospace manufacturing with global service operations. Through an ongoing improvement process, PWC seeks to improve the monitoring of its machining process aiming to reduce cost and prevent the tools, workpieces and machine damages during the machining. To achieve this improvement, data mining and advanced artificial intelligence technique is used. A robust machining monitoring system especially for critical rotating parts will keep the quality of the process under control and highlight any deviations in closed-door process.

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## **Honors and Awards**

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| 2015 | Best Ph.D. Thesis award Nomination, Polytechnique Montreal, Canada.  |
| 2014 | Best paper award, “1st place”, Society for Engineering & Management System (SEMS) Student Paper Competition.     |
| 2014 | Best paper award, Proceedings of the 2014 Industrial and Systems Engineering Research Conference, Montreal 2014. |
| 2014 | Award-winning, Industrial Management (IM) magazine, “selected best paper for publication”                        |
| 2014 | Included my name in “IIE Honors & Awards Program”  |
| 2013 | École Polytechnique de Montreal scholarship International Tuition Fee Remission Award.                           |
| 2012 | Natural Sciences and Engineering Research Council of Canada (NSERC) scholarship.                                 |
| 2001 | Honors degree in Mechanical Engineering, Helwan University, Cairo, Egypt   |

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## **Media Reviews**

### **École Polytechnique de Montréal :**

The École Polytechnique de Montréal is an engineering school/faculty affiliated with Université de Montréal in Montreal, Canada. It ranks first in Canada for the scope of its engineering research.

French: [Click here](#) , English: [Click here](#)

### **Nature Arabic edition:**

Nature is a prominent interdisciplinary scientific journal. It was first published on 4 November 1869. It was ranked the world's most cited journal.

[Click here.](#)

### **Institute of Industrial Engineers (IIE):**

The IIE is the organization that gathers the largest community of industrial engineers over the world.

[Click here](#)

**Society of Engineering and Management System (SEMS):**

[Click here](#)

**Al-Ahram Newspaper (Arabic):**

The most widely circulating Egyptian daily newspaper, it is majority owned by the Egyptian government.

[Click here](#) , [Click here](#) and [Click here](#)

**Al-Masry Al-Youm (Arabic):**

An Egyptian privately owned daily newspaper that was first published in June 2004.

[Click here](#) and [Click here](#)

**Academic Consultant for " Who Wants To Be A Millionaire" Program in Middle East.**

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## Memberships

Member of Institute of Industrial Engineers (**IIE**), USA; Member # 880140586

Member of Society for Engineering & Management System (**SEMS**).

Member of Industrial Engineering and Operations Management Society (**IEOM**).

Member of Egyptian Engineering syndicate, Egypt.

Member of Helwan University, Mechanical Engineering Group, Cairo, Egypt.

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## Language Skills

English: Full professional proficiency.

French: intermediate.

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## References

**Soumaya Yacout**, Professor in the Department of Mathematics and Industrial Engineering at École Polytechnique de Montréal - Canada; [soumaya.yacout@polymtl.ca](mailto:soumaya.yacout@polymtl.ca)

**Marek Balazinski**, Professor in the Department of Mechanical Engineering at École Polytechnique de Montréal - Canada; [marek.balazinski@poly](mailto:marek.balazinski@poly)

