

# CURRICULUM VITÆ

## Dr. Othman M. Maklouf

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### Personal Details:

**Gender :** Male  
**Date of birth :** January 1<sup>st</sup>, 1967  
**Place of birth :** Tripoli, Libya  
**Citizenship :** Libyan

### Home Address:

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### Language Knowledge:

**Arabic :** Native  
**English :** Good

### Computer Knowledge:

**Programming Language:** Fortran, MATLAB, Simulink, visual basic.  
**Windows Applications:** Good  
**Microsoft Office:** Very good

### Education:

1. **10/1984–09/1989** Bachelor of Applied Science (Bsc. Degree) in Electrical Engineering at Engineering Academy, Tajoura, Libya.
2. **01/1992–02/1995** Master of Applied Science (Msc. Degree) in Electrical Engineering at MTC, Cairo, Egypt.  
**Thesis:** "Theoretical Investigation of Homing Guidance Laws"  
**Supervisor:** Professor G. Saeed.
3. **01/2004–09/2009** Doctor of Philosophy (Ph.D. Degree) in Aerospace Engineering at Cairo University, Egypt.

**Thesis:** "GPS/INS Integrated Navigation System"

**Supervisors:** Dr.Y. El halwagy, Dr. M. S. Bayumi and Professor Dr. S.D. Hassan.

### **M.Sc. Thesis:**

The project presents a numerical investigation of the Proportional navigation and has proved to be a useful guidance technique in several surface-to-air and air-to-air missile systems for interception of airborne targets. In this investigation, the basic theory of proportional navigation is presented and clarified. In addition, two variations on this guidance method are treated: one in which the commanded acceleration is biased by a small value of the measured rotational rate of the line of sight between the interceptor and its target, and one in which the line-of-sight rotational rate is reduced to a prescribed value (dead space) and then maintained at this rate until intercept; however, the guidance theory presented is also applicable to the intercept of a non-maneuvering airborne target.

### **Ph.D. Thesis:**

The main objective of the work was to investigate, develop and test INS/GPS integrated navigation system. This goal has been met with the development of software through which it has been possible to perform several types of simulations and tests. Under good conditions GPS will be able to provide continuous and accurate positioning to the user at all time. But unfortunately, good conditions will not always occur as the signal from the satellites can be blocked or attenuated by different error sources. INS is a perfect navigation system, as it provides continuous navigation information without being affected by the surrounding environment. While the main problem about using INS to navigation systems is therefore the unlimited errors that will occur over time if no precautions are taken. The system therefore sees to drift with time. The INS/GPS integrated system provided a level of position accuracy which is directly associated to the GPS-only solution in a situation of good satellite geometry and no GPS outages. The experimental work of this work has shown the effective combination of two different sensors (GPS and IMU) each with their own strengths and weaknesses. The "low cost" IMU used in this work is not capable of running by itself and providing any reasonable positioning information. GPS provides good results, but is only capable of determining position every second. The two sensors combined have the capability of producing good estimates of position in between the one second updates.

### **TECHNICAL WORKING EXPERIENCE:**

1. **10/1989–12/1991** Research Assistance and teaching tutorials for undergraduate students in Engineering Academy Tajoura for the courses;
  - Fundamental of Electrical Engineering.
  - Electronics lab.
  - Digital Fundamentals.
  - Logic Design.
2. **01/1992–02/1995** M.Sc. research student in Electrical Engineering Department at MTC, Cairo, Egypt.

3. **02/1995–12/2003** Lecturer in Engineering Academy Tajoura, and College of Electronic Technology Tripoli, the courses are:
  - Applied Electronics and Instrumentation.
  - Guidance Systems.
  - Fundamental of Electrical Engineering.
4. **01/2004–10/2009** PhD research student in Faculty of Engineering, Aerospace Engineering Department, Cairo University.
5. **Since 10/2009** Lecturer teaching the following courses at Engineering Academy, Tripoli University, College of Electronic Technology Tripoli:
  - AVIONICS.
  - Automatic control system.
  - Aircraft Instrumentation.
  - Fundamentals of Inertial Navigation System.
  - Introduction to Navigation System.
  - Electrical Circuits Fundamentals.
  - Applied Electronics and Instrumentation.
  - Supervision of B.Sc. Projects.
  - Supervision of M.Sc. Thesis.

### **Administrative Working Experience:**

My professional working experience is:

1. **10/1989–12/1991**
  - Head of Student Office Affairs.
  - Electronics Lab Coordinator.
2. **01/1998–12/2003:** Head of Computer Engineering Department.
3. **09/2009- 8/2014:** Head of Electronic Engineering Department.
4. **Since 09/2014:** Academic Staff Member at Aeronautical Engineering Department, University of Tripoli.

### **Technical Publications:**

1. O. M. Maklouf, Ahmed Azouz, Y.El halwagy, M. Bayoumi " GPS /INS Integration for Land Vehicle Navigation Application". AL-Azhar Engineering Tenth International Conference (AEIC 2008) December 24-26, 2008, Faculty of Engineering, Al-Azhar Univ., Egypt.
2. O. M. Maklouf, Y. El halwagy , M. Bayoumi . And S. D. Hassan." Cascade Kalman Filter Application in GPS/INS Integrated Navigation for Car like Robot". 26<sup>th</sup> National Radio Science Conference (NRSC2009) March 17-19, 2009, Faculty of Engineering, Future Univ., Egypt.
3. O. M. Maklouf, Y. El halwagy , M. Bayoumi . And S. D. Hassan."Par IMU/GPS Integration in Car Navigation Like Robot" International Association of Institutes of Navigation - IAIN in Stockholm, Sweden, October 27- 30, 2009".
4. O. M. Maklouf and A. Ghila."GPS/INS Integrated Navigation system" International Engineering Conference (7<sup>th</sup> IEC), March 23-28, 2010, Mansoura University, Egypt.

5. O. M Maklouf, Abdurazag Ghila and Ahmed Abdulla" Cascade Kalman Filter Configuration for Low Cost IMU/GPS Integration in Car Navigation Like Robot" International Journal of Mechanical, Aerospace, Industrial and Mechatronics Engineering Vol:6, No:6, 2012.
6. O. M Maklouf, Abdurazag Ghila, Saleh Gashoot" GPS \ INS Integration Application in Flight Management System", International Journal of Aerospace, Mechanical, Automotive and Materials Engineering, Vol:6, No:11, 2012.
7. O. M Maklouf and Abdurazag Ghila" Low Cost IMU \ GPS Integration Using Kalman Filtering for Land Vehicle Navigation Application" international Journal of Electrical, Computer, Electronics and Communication Engineering Vol:7, No:2, 2013
8. O. M Maklouf and Ahmed Adwaib" Performance Evaluation of GPS \INS Main Integration Approach" International Journal of Mechanical, Aerospace, Industrial and Mechatronics Engineering Vol:8, No:2, 2014.
9. O. M Maklouf and Ahmed Abdulla "1G2A IMU\GPS Integration Algorithm for Land Vehicle Navigation" International Journal of Electrical, Robotics, Electronics and Communications Engineering Vol:8 No:3, 2014.
10. O. M Maklouf, Salah Abdulhadi, Mahmoud Benhamid and Hanin Shibl "Performance Evaluation Of INS Based MEMES Inertial Measurement Unit " International Journal of Computing, Communications & Instrumentation Engg. (IJCCIE) Vol. 2, Issue 1 (2015) ISSN 2349-1469 EISSN 2349-1477.
11. O. M Maklouf, Saleh Basha and A. Eljubrani "Performance Evaluation of Proportional Navigation Homing Guidance Law" 5th International Conference on Control Engineering & Information Technology (CEIT-2017) Proceeding of Engineering and Technology –PET Dol.33 pp. 14-18.
12. Othman Maklouf, Aya Abulsayen, Amira Ghanem "Trajectory Tracking, Simulation and Shaping of Moving Land Vehicle Using MATLAB, INS and GPS" 2019 19th International Conference on Sciences and Techniques of Automatic Control and Computer Engineering (STA), URL: <http://ieeexplore.ieee.org/stamp/stamp.jsp?tp=&arnumber=8717224&isnumber=8717189>.
13. Othman Maklouf, Alej Fateh, A Eljubrani "Data Collection, Analysis and Trajectory Determination of A Quadrotor Using Ardu IMU and MATLAB" 8 ème Conférence Internationale en Automatique & Traitement de Signal (ATS-2019) Proceedings of Engineering and Technology PET. ISSN : 1737-9934.
14. O Maklouf, M Ashawesh, AA Mgig, A Eljubrani – "Implementation of Stabilized Aircraft Control Surface using Inertial Sensors, MATLAB & Arduinon. [2021 IEEE 1st International Maghreb Meeting of the Conference on Sciences and Techniques of Automatic Control and Computer Engineering MI-STA](#). DOI: [10.1109/MI-STA52233.2021](https://doi.org/10.1109/MI-STA52233.2021).

### Conferences:

1. AL-Azhar Engineering Tenth International Conference (AEIC 2008) December 24-26, 2008, Faculty of Engineering, Al-Azhar Univ., Egypt.

2. 26th National Radio Science Conference (Nrsc2009) March 17-19, 2009, Faculty of Engineering, Future University, 5th Compound, New Cairo, Egypt.
3. International Association of Institutes of Navigation - IAIN in Stockholm, Sweden, October 27- 30, 2009”.
4. 7th International Engineering Conference (IEC), March 23-28, 2010, Mansoura University, Egypt.
5. World Academy of Science, Engineering and Technology (WASET) International Conference on Aerospace, Mechanical, Automotive and Materials Engineering. Paris, France, June 27-28, 2012.
6. World Academy of Science, Engineering and Technology (WASET) International Conference on Aerospace, Mechanical, Automotive and Materials Engineering. Venice, Italy, Nov. 14-16, 2012.
7. World Academy of Science, Engineering and Technology (WASET) International Conference on Aerospace, Mechanical, Automotive and Materials Engineering Kuala Lumpur, Malaysia, Feb. 14-16, 2013.
8. World Academy of Science, Engineering and Technology (WASET) International Conference on Aerospace, Mechanical, Automotive and Materials Engineering, Dubai, UAE, Oct. 26-27, 2013.
9. World Academy of Science, Engineering and Technology (WASET) International Conference on Aerospace, Mechanical, Automotive and Materials Engineering. Istanbul, Turkey March 24 - 25, 2014.
10. 3rd International Conference Recent trends in Engineering and Technology (ICRET’2015). IIE 2015 Conference Sept. 2-3, 2015, Istanbul, Turkey.
11. 5th International Conference on Control Engineering & Information Technology (CEIT-2017), 17-19 December 2017, Sousse –Tunisia.
12. 19th international conference on Sciences and Techniques of Automatic control & computer engineering (STA), Sousse, Tunisia, March 24-26, 2019.
13. 8<sup>ème</sup> Conférence Internationale en Automatique & Traitement de Signal, 19-22 Décembre 2019 Tunisie – Sousse.
14. 2021 IEEE 1st International Maghreb Meeting of the Conference on Sciences and Techniques of Automatic Control and Computer Engineering MI-STA, Tripoli, Libya.

#### **Short Courses Attended:**

1. “Introduction to Inertial Navigation and Kalman Filtering”. Stockholm, Sweden.
2. “Indoor GNSS - Challenges and Performance”. IAIN2009, Stockholm, Sweden.
3. “GNSS system description and INS integration”. IAIN2009, Stockholm, Sweden.
4. “Navigation Refresher course”. Royal Jordanian Air Academy, Sep. 2012, Amman-Jordan.