

PERSONAL DATA  
RESUME

• **NAME : HESHAM AHMED HEGAZI**

• **DATE OF BIRTH :** 11/2/1970

• **PLACE OF BIRTH :** Cairo, EGYPT.

• **NATIONALITY :** Egyptian.

• **MARITAL STATUS :** Married, father of Ahmed.

• **TELEPHONE No. :**

(Mobile) 2012-3910720.

(office) (202)5678271, **Secretary:** (202)5678516.

• **PROFESSIONAL :**

**From 9/2001 to Present,**

- Assitant Professor of Machine Design. Mechanical Design and Production Dept. Faculty of Engineering, Cairo University.

**From 7/97 to 7/2001,**

- Associate Lecturer of Machine Design and Drawing, CAD. Mechanical Design and Production Dept. Faculty of Engineering, Cairo University.

**From 10/92 to 7/97,**

- Teaching Assistant of Machine Design and Drawing, CAD. Mechanical Design and Production Dept. Faculty of Engineering, Cairo University.

**From 6/97 to 9/2001,**

- Research Associate, Project of Maintainance and Spare Part Fabrication Center in Support of the Egyptian Industry. Project ID: 202007.

**From 1/96 to 7/96,**

- Teaching Assistant, Engineering Department, Mechanical Engineering Unit, The American University in Cairo (AUC).

**From 10/97 to 1/98,**

- Visiting Design Engineer, (AMI) Al-Mohandes International Co.

**From 7/96 to 9/96,**

- P.T. (Part Time) Maintenance Visiting Engineer in the field of Preventive Maintenance and conditional monitoring in several factories in Egypt.

**From 7/92 to 7/94,**

- P.T. (Part Time) Mechanical Design Engineer at PANTECH Design Office .

• **E - Mail :** [HAHEGAZI@ALPHA1-ENG.CAIRO.EUN.EG](mailto:HAHEGAZI@ALPHA1-ENG.CAIRO.EUN.EG), or [hahegazi@yahoo.com](mailto:hahegazi@yahoo.com)

• **LANGUAGES :** Mother Tongue : Arabic .

Other Languages : French, English . (Fluent in both languages) .

• **EDUCATION :**

**2001 :** Ph.D degree in Mechanical Engineering ,Cairo University.

Thesis title: "*Shape Optimization of NURBS Modeled Elements Using Hybrid Genetic Algorithm*" .

**1997** : M.Sc. degree in Mechanical Engineering, Cairo University.

Thesis title: "*Computer Aided Design and Optimization of Disc Brakes*".

**1994** : Pre - Master Courses in the Dept. of Mechanical Design and Production.

**Grade** : V. Good. Top of the Post Graduate Class.

**1992** : B.Sc. in Mechanical Engineering, Faculty of Engineering, Cairo University.

Department of Mechanical Design and Production .

**Grades** : Preparatory Year : V . Good .

1<sup>st</sup> Year : Distinction .                      2<sup>nd</sup> Year : Distinction .

3<sup>rd</sup> Year : V. Good .                      4<sup>th</sup> Year : Distinction .

**Final Grade** : Distinction with Honor Grade(85%)

**B.Sc. Project** : Distinction, With a rate of top 3% over the Graduate Class (130 students), Project Title: "*Computer Aided Mechanical Construction*".

**1984 - 1987** : College De La Salle - Daher, Cairo

(Sec. school Certificate, Gov. Thanawiya Amma)

Overall Average : 86% {French school} .

**1974 -1984** : College Des Freres - Bab El Louk,

Cairo. (Primary and Preparatory school) {French school}.

• **MEMBERSHIP & HONORS :**

- Member of the Egyptian Syndicate of Engineers (Mechanical Department).
- Faculty Highest Honor (Distinction with Honor Degree, 1992).
- Student Member, American Society of Mechanical Engineering, (ASME).
- Selected Who's Who in America in Science and Engineering 1998-1999 (4th Edition).
- Best Paper Award, Design Engineering Technical Conf., Division of Computers in Engineering, American Society of Mechanical Engineering, (ASME) , Las-Vegas, Nevada, USA, Sept, 13-16, 1999.
- Student Travel Award, Design Engineering Technical Conf., American Society of Mechanical Engineering, (ASME), Las-Vegas, Nevada, USA, Sept, 13-16, 1999.
- Selected for publication in Who's Who in The World 2001 (18th Edition).

• **PRACTICAL EXPERIENCES :**

- **After Graduation (From 1992 to Present) :**

**PANTECH** [Pantechologies]

- \* Design of Belt Conveyers, inclined and telescopic types using CAD techniques (AutoCAD 12) .
- \* Design of the first TruckMixer in Egypt.
- \* Having a wide experience in AutoCAD, a side working of making the representation drawings of a technical school at Beni-Sweif in Egypt .
- \* Design and Developing of a computer Aided Process Planing (CAPP) program for turning, boring, milling operations for Misr Aluminum Co.,

**- From 5/8/1991 to 5/9/1991 :**

**ENPPI** Petroleum Co.

(Engineering for Petroleum and Processes Industries)

- \* The training consists of the design and construction of horizontal, vertical, and spherical pressure vessels according to ASME code Sec.8 Div. 1.
- \* Design of Pipelines using CADD5-4X Workstation.
- \* Selection of Turbomachines such as Pumps.
- \* Training period on AutoCAD 11, AutoSHADE.

**- From 7/7/1991 to 25/7/1991 :**

**AGIBA** Petroleum Co.

- \* The training consists of practical training on pumps, compressors, analysis of it's failure using vibration measuring instruments.
- \* Theoretical and practical study of wells, it's construction.
- \* Power generation equipment; gas turbines power plant.
- \* Fire protection of petrol tanks and equipment (Firing systems).
- \* Using of diesel engines in power generation .

**- From 2/7/1990 to 26/9/1990 :**

**CAILLARD** Levage, Le Havre, France .

The only company in France in the Design and Manufacturing of port cranes since 1859 .

- \* The training in the design office consists of the design and assembly practices of cranes, specially of it's bogies, it's constructional details, design of it's shafts, bearings, gears, wheels, using DIN and AFNOR standards.
- \* Assembly and working drawings using CADD5-4X Workstation (SUN Spark) from ComputerVision.
- \* Training in 3D drawings, making of complex constructions using expanding views to show assembly sequence.
  - Design and construction of a level detection system and it's peripherals for a hopper .

**- From 24/7/1989 to 28/9/1989 :**

**GENERAL MOTORS EGYPT (GME)**

- \* Paint Shop (sequence process of painting of vehicles).
- \* Rear body of TFR model (light truck 1.5 ton in capacity), design and manufacturing of cargo box, using CNC bending machine spot and CO<sub>2</sub> welding.
- \* Diesel and gasoline engines, study, performance, assembly and disassembly.
- \* Chassis assembly, welding and riveting.

• **UNDERGRADUATE COURSES TAUGHT:**

**- Computer Aided Design (CAD) , (Lab.), [2 hrs/week] :**

For 4<sup>th</sup> Year Mechanical Design and Production Dept. students. No. of students : 13 .

- **Mechanical System Design** , (Sections), [4 hrs/week] :

For 4<sup>th</sup> Year Mechanical Design and Production Dept. students. No. of students : 60 .

- **Machine Design** , (Sections), [4 hrs/week] :

For 3<sup>rd</sup> Year Mechanical Design and Production Dept. students. No. of students : 60 .

- **Machine Design** , (Sections), [2 hrs/week] :

For 2<sup>nd</sup> Year Mechanical Engineering Dept. students No. of students : 60 .

- **Machine Drawing** , (Sections), [4 hrs/week] :

For 1<sup>st</sup> Year Mechanical Engineering Dept. and Mining, Petroleum, Metallurgy Dept. students. No. of students : 170 .

- **Engineering Drawing** , (Sections), [8 hrs/week]:

For Preparatory Year of Engineering students. No. of students : 90 .

- **Computer-Aided Drafting**, (Sections), [6 hrs/week]:

For Preparatory Year of Engineering students. No. of students : 150 .

- **Mechanical Systems**, (Lab.), [6 hrs/Week]:

Course MENG- 371, The American University in Cairo. No. of Students : 36.

- **GRADUATE COURSES TAUGHT:**

- **Selected Topics in Machine Design**, [2 hrs/week], for M.Sc. students.

- **GRADUATE STUDENTS:**

1. **Mohamed M. Shalaby**, M.Sc. student, field of research: “Topology Optimization of Structures with Negative Poisson’s Ratio”. Expected Completion: Dec. 2002. (co-advisor with Dr. Sayed Metwalli, Dr. Ashraf Nassef).
2. **George Samir Salem**, M.Sc. student, field of research: “Optimization applied to Feature Recognition”, Expected Completion: June 2003. (co-advisor with Dr. Sayed Metwalli).
3. **Waleed M. El-Salamy**, M.Sc. student, field of research: “Optimization in sound Isolation”, Expected Completion: May 2002. (co-advisor with Dr. Tarek Osman).
4. **Abdel-Moneim Mohamed**, M.Sc. student, field of research: “Optimization of gears”, Expected Completion: June 2004. (co-advisor with Dr. Sayed Metwalli).

- **B.Sc. PROJECTS:**

1. Reverse Engineering, (Development of fitting software for scanned parts).
2. Reverse Engineering, (Application).
3. Development of an Electrical Vehicle.
4. Development of an Human Operated Light Vehicle.
5. PC based Automation.
6. Development of a CAD software for Pumps Design.
7. Development of a Maintenance Program for Arab Contractor Company.

• **ACTIVITIES & INTERESTS :**

- **Studies :** Computer Aided Design, Computer Aided Manufacturing (CAD/CAM) . Machine Design, Constructional consideration in Machine Design, (Constructional details and requirements using CAD techniques) . Design Theory and Methodology. Design Automation. Computer Graphics and application in machine drawing. Computer Aided Software Engineering (CASE) . Theory of Machines, and Mechanism dynamics. Design of pressure vessels, gear boxes, hydraulic mechanisms, Material Handling Equipment. Applications and installation of Anti-friction bearings. Stress analysis of machine elements.

- **Computer Science :** Expert in AutoCAD up to Release 2000, AutoLISP programming language. Design of a software using AutoLISP under AutoCAD for machine design and constructional details. Programming using VisualBASIC, AutoLISP, and MATLAB language. Expert on CADD-4X Workstation from ComputerVision, SDRC-IDEAS (Intergraph) and a course in IBM International in Novell Networks (Netware 4.0).

- **Sports :** Player of Basket-Ball in the National Club team in Cairo from 1978 to 1987 . Swimming, Football and Camping .

- **Traveling :** France for three months (1990), Hungary for two weeks (1994), and USA for three times (1999, 2000, and 2001).

• **PUBLICATIONS :**

**Lecture Notes**

1. Hegazi, H.A., “**Machine Design, Lecture Notes**”, for 3<sup>rd</sup> year Mechanical Power Engineering Students, Cairo University, Faculty of Engineering Press, 100 pp., 2001.

**Technical Papers**

1. Hegazi, H.A., Nassef, A.O., Metwalli, S.M., “**Shape Optimization of NURBS Modeled 3D C-Frames Using Hybrid Genetic Algorithm**”, (Submitted for acceptance), 2002 ASME Design Automation Conference, Paper Number DAC02-082, Montreal, Canada, Sept 29 - Oct 2, 2002.
2. **Hegazi, H.A., Nassef, A.O., Metwalli, S.M., “Shape Optimization of NURBS Modeled 3D Frames Using Hybrid Genetic Algorithm**”, Proceeding of the 6<sup>th</sup> Ain Shams International Conf. On Production Engineering and Design for Development PEDD-6, Cairo, Feb. 12-14, 2002 .
3. **Hegazi, H.A., “Shape Optimization of NURBS Modelled Elements Using Hybrid Genetic Algorithm**”, **Ph.D. Dissertation, Cairo University, Cairo, June, 2001.**
4. Metwalli, S.M., Hegazi, H.A., “**Computer-Based Design of Disc Brakes by Multi-Objective Form Optimization**”, ASME Design Engineering Technical

- Conference, Paper No.DETC2001/CIE-21680, Sept., 9-12, Pittsburgh, Pennsylvania, USA, 2001.
5. Metwalli, S.M., Radwan, M.A., Shalaby, M., Nassef, A.O., Hegazi, H.A., Ashraf, A.M., Hosni, Y., Moussa, Y., “**Error Minimization in the Reverse Engineering of Free Form Surfaces for Part Modeling**”, Int.Conf. on Industry, Engineering, and Management Systems (IEMS), and the Int. Conf. On Computers and Industrial Engineering (28<sup>th</sup> ICC&IE), Cocoa Beach, Florida, March 5-7, 2001.
  6. Metwalli, S.M., Hegazi, H.A., “**Reverse Engineering and CAD of Bevel Gears**”, Int.Conf. on Industry, Engineering, and Management Systems (IEMS), and the Int. Conf. On Computers and Industrial Engineering (28<sup>th</sup> ICC&IE), Cocoa Beach, Florida, March 5-7, 2001.
  7. Shalaby, M.M., Metwalli, S.M., Nassef, A.O., Hegazi, H.A., Ashraf, A.M., “**A Least-Squares Fitting Approach For The Reverse Engineering of Prismatic Surfaces**”, Conference of the Egyptian Society of Mechanical Engineers, 28 March 2001, Cairo, Egypt.
  8. Shalaby, M.M., Metwalli, S.M., Nassef, A.O., Hegazi, H.A., Ashraf, A.M., “**A Least-Squares Fitting Approach For The Reverse Engineering of Free Form Surfaces**”, 7<sup>th</sup> International Conference on Production Eng., Design and Control, 13-15 Feb., 2001, Alexandria, Egypt.
  9. Nassef, A.O., Hegazi, H.A., and Metwalli, S.M., “**A Hybrid Genetic-Direct Search Algorithm for the Shape Optimization of Solid C-Frame Cross-Sections**”, ASME Design Engineering Technical Conference, Sept. 13-16, Baltimore, Maryland, 2000, Paper No. DETC 2000/DAC-14295.
  10. Metwalli, S.M., Hegazi, H.A., Shalaby, O., and Moussa, Y., “**Standard Machine Elements Geometry Identification and Redesign**”, 7<sup>th</sup> Cairo University International Conference on Mechanical Design and Production (MDP-7), Feb. 15-17, 2000, Vol. 3, pp. 63-70.
  11. Hegazi, H.A., Metwalli, S.M., “**Reverse Engineering of Standard Mechanical Elements**”, ASME Design Engineering Technical Conference, Sept. 12-16, Las-Vegas, Nevada, 1999, Paper No. DETC 99/CIE-9137. (*Best Paper Award*).
  12. Nassef, A.O., Hegazi, H.A., and Metwalli, S.M., “**Design of C-Frames Using Real-Coded Genetic Optimization Algorithms and NURBS**”, ASME Design Engineering Technical Conference, Sept. 12-16, Las-Vegas, Nevada, 1999, Paper No. DETC 99/CIE-9138.
  13. Metwalli, S.M., Hegazi, H.A., and Abdel-Aal,U.M, “**CAD of Disc Brakes By Multi-Objective Optimization**”, ASME Design Engineering Technical Conference, Sept. 12-16, Las-Vegas, Nevada, 1999, Paper No. DETC 99/CIE-9139.
  14. Osman, T.A., Hegazi, H.A., “**A Fuzzy Approach for the Selection of Power Transmission Systems in the Preliminary Design Stage**”, Journal of Engineering and Applied Science, Vol. 46, No. 4, August 1999, pp.679-692 , Fac. of Eng., Cairo University.
  15. Hegazi, H.A., “**Computer Aided Design And Optimization of Disk Brakes**”, M.Sc. Thesis, Cairo University, Cairo, June, 2001.
  16. Hegazi, H.A., “**General Overview, Selection and Implementation of CAD/CAM Systems**”, Proc. of the first Conf. for Development and Research in Egyptian Industry, Fac. of Eng, Cairo University, March 2-3, 1997.

## Articles

1. Hegazi H.A., “**Black Box in Vehicles Also**”, Nasr Automotive Magazine, June 1995, Vol.312, pp. 10-11.
2. Hegazi H.A., “**The New Designs of Suspension Syatems: Multi-link Beam Suspension**”, Nasr Automotive Magazine, August 1995, Vol.314, pp.44-45.
3. Hegazi, H.A., “**Aluminum in Cars Boby Also**” , Nasr Automotive Magazine, January 1996, Vol.319, pp. 38-39.
4. Hegazi, H.A.,”**Gearboxes, The development for the Easyness**”, Nasr Automotive Magazine, March 1996, Vol.321, pp. 14-15.
5. Hegazi, H.A., “**CAD of Vehicles Parts**” , Nasr Automotive Magazine, April 1996, Vol. 322, pp14-16.
6. Hegazi, H.A.,”**CAM of Vehicles Parts**” , Nasr Automotive Magazine, May 1996, Vol. 323, pp16-18.
7. Hegazi, H.A., “**Virtual Reality in the Design of Vehicles**” , Nasr Automotive Magazine, August 1996, Vol. 326, pp12-13.
8. Hegazi, H.A., “**The Rotary Engine**”, Nasr Automotive Magazine, November 1996, Vol. 329, pp.16-17.

## ● **ATTENDED CONFERENCES:**

1. 6<sup>th</sup> Ain Shams International Conf. On Production Engineering and Design for Development PEDD-6, Cairo, Feb. 12-14, 2002, Ain Shams University, Cairo, Egypt. (Author).
2. Int.Conf. on Industry, Engineering, and Management Systems (IEMS), and the Int. Conf. On Computers and Industrial Engineering (28<sup>th</sup> ICC&IE), Cocoa Beach, Florida, March 5-7, 2001, USA. (Author).
3. 7<sup>th</sup> International Conference on Production Eng., Design and Control, PEDAC-5, 13-15 Feb., 2001, Alexandria, Egypt. (Author).
4. ASME Design Engineering Technical Conference, Sept. 13-16, Baltimore, Maryland, 2000, USA. (Author).
5. 7<sup>th</sup> Cairo University International Conference on Mechanical Design and Production (MDP-7), Feb. 15-17, 2000, Cairo, Egypt. ( Organizing committee, Author).
6. ASME Design Engineering Technical Conference, Sept. 12-16, Las-Vegas, Nevada, 1999, USA. (Author).
7. 5<sup>th</sup> International Conference of the Egyptian Society of Tribology, April, 10-12, Cairo University, 1999. ( Organizing committee).
8. 1<sup>st</sup> Conf. for Development and Research in Egyptian Industry, Fac. of Eng, Cairo University, March 2-3, 1997.( Organizing committee, Author).
9. 6<sup>th</sup> International Conference on Mechanical Design and Production, Cairo University, Egypt, 1996. (Organizing committee).
10. 4<sup>th</sup> International Conference of the Egyptian Society of Tribology, Jan, 4-5, Cairo University, 1995. ( Organizing committee).
11. 5<sup>th</sup> International Conference on Mechanical Design and Production, Cairo University, Egypt, 1992. (Organizing committee).

• **REFERENCES :**

- **S. M. Metwalli** , Ph.D. , Member ASME, Professor and Head, Mechanical Design and Production Dept., Cairo University .
- **M. B. Trabia**, Ph.D., Professor, Mechanical Engineering Department, University of Nevada, Las Vegas, Nevada, USA.
- **A. O. Nassef**, Ph.D., Assistant Professor, Mechanical Design and Production Dept.,Cairo University.

More refereces can by submitted upon request.

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