# CURRICULUM VITAE

## HEYWOOD OUMA ABSALOMS

### PERSONAL

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|---|---|
| **Date of Birth** | 23 January 1965 |
| **Gender** | Male |
| **Marital Status** | Married, with one child |
| **Health** | Good |
| **Permanent Address** | P O Box 896, Kisumu |
| **Current Address** | P O Box 32555-00600, Nairobi |
| **E-mail** | *houma@ieee.org* |
| **Phone** | *Mobile:* 0722-767408 |
| | *Work:* (020) 318262 x 28327 |

### PHILOSOPHY

*"The only one you can be sure to perfect is yourself…"*
*"In all you do, do as to the LORD and not as to man…"*
*"Be true to yourself, and perform with honesty and integrity in all endeavours."*

I purpose to achieve my full potential in my chosen academic field and undertakings, always aiming at applying my knowledge, training and skills to improve myself and my environment; with the goal of leaving all that I interact with, all the better for my involvement.

### ACADEMIC

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|---|---|
| Apr 1994-<br>Apr 1998 | **Doctor of Philosophy (Ph.D.) in Engineering,** Kanagawa Institute of Technology, Atsugi, Kanagawa, Japan. On scholarship from the Japanese Government through the Japan Ministry of Education (Monbusho). Research in the field of Telecommunication Image Processing - Application of Genetic Algorithms. Graduated 25/3/98. |
| Oct 1994 -<br>Mar 1995 | **Japanese Language Studies**, Osaka University of Foreign Languages (Gaikokugo daigaku), Osaka, Japan. Successfully completed the 6-month language course. |
| Feb 1991 -<br>Jul 1992 | **Masters of Engineering in Telecommunications (M.Eng. (Telecomm. Eng.))**, University of Technology Sydney on a scholarship grant from the Australian Government through Australia International Development Assistance Bureau (AIDAB.) Graduated 30/4/93. |
| Feb 1990 -<br>Dec 1990 | **Graduate Diploma in Engineering (Gr.Dip.Eng. (Electrical)),** University of Technology Sydney. Graduated with Distinction on 10/5/91 |
| Sep 1985 -<br>Jul 1988 | **Bachelor of Science in Electrical Engineering (B.Sc. (Elec)),** University of Nairobi, Kenya. |

Graduated with First Class Honors on 23/11/88

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|---|---|
| Jun 1985 - Aug 1985 | **National Youth Service (NYS) Pre-University Training Program**, Gilgil.  Successfully completed the basic training program for the NYS. |
| Feb 1982 - Dec 1983 | **Kenya Advanced Certificate of Education (KACE)**, Maseno School.  Attained the following grades: A in Mathematics, Further Mathematics and Chemistry and B in Physics. |
| Feb 1978 - Nov 1981 | **Kenya Certificate of Education (KCE)**, Maseno School. Passed in Division 1 attaining the following grades: Grade 1 in English Language, Geography, Mathematics, Additional Mathematics, Physics, Chemistry and Biology and Grade 3 in Lugha ya Kiswahili. |
| Jan 1971 - Nov 1977 | **Certificate of Primary Education (CPE)**, Juja Road Primary School. Attained the following grades: Grade A in English and General Subjects and grade A- in Mathematics. |

## PROFESSIONAL SOCIETIES/ QUALIFICATIONS

| | |
|---|---|
| 1999- | Institute of Electrical and Electronics Engineers (IEEE), Associate Member |
| 1995-1998 | Institute of Electronics, Information and Communication Engineers of Japan (IEICEJ), Student Member |
| 1996-1998 | Institute of Electrical and Electronics Engineers (IEEE), Student Member |
| 1989 | **Graduate Engineer**, accepted for registration by the Engineers Registration Board (ERB) |
| 1988- | Institute of Engineers of Kenya, Graduate member |
| 1986-1988 | Institute of Engineers of Kenya, Student member |

## PROFESSIONAL CONFERENCES, SEMINARS, SYMPOSIA, ETC.

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|---|---|
| Aug 2006 | *The Twelfth Kenya Society of Electrical and Electronics Engineers (KSEEE) International Conference*, Nairobi, Kenya, Aug 2006 |
| May 2005 | Management Development Programme, Nanyuki, Kenya, May 2005 |
| Nov 2000 | USAID sponsored workshop on *The Use of Advanced Online Technology in Teaching,* Jomo Kenyatta University of Agriculture and Technology, Kenya, Nov 2000 |
| Sept/Oct 1999 | *IEEE Africon '99*, 5th Africon Conference in Africa, Cape Technikon, Cape Town South Africa, Sept/Oct 1999. |
| Aug 1998 | *The Fourth Kenya Society of Electrical and Electronics Engineers (KSEEE) International Conference*, Nairobi, Kenya, Aug 1998 |
| July 1997 | *1997 International Technical Conference on Circuits/Systems, Computers and Communications (ITC-CSCC'97,)* Naha, Okinawa, Japan, July 1997 |
| Oct 1996 | *The 20th International Conference on Computers and Industrial Engineering (ICC&IE'96,)* Kyongju, Korea, Oct 1996 |
| Aug 1995 | *The First Kenya Society of Electrical and Electronics Engineers (KSEEE) International Conference*, Nairobi, Kenya, Aug 1995 |
| Aug 1994 | *The Fourth Annual JKUAT Electrical Engineering Seminar* on "Innovations in Electrical and Electronic Engineering," JKUAT, Kenya, Aug 1994 |
| Mar 1994 | *Regional Group Training Programme* in "Applied Electrical and Electronic Engineering Technology," JKUAT, Kenya, March 1994 |
| Aug 1993 | *The Third Annual JKUAT Electrical Engineering Seminar* on "Technological Trends in Electrical and Electronics Engineering," JKUAT, Kenya, Aug 1993 |
| Jul 1991 | *Australian Broadband Switching and Services Symposium '91,* Sydney, Australia, July 1991 |

## PUBLICATIONS

*PAPERS:*

1999    Absaloms H., and T. Tomikawa, 1999, **GA Relaxation Labeling,** *Trans. IEEJ, Vol. 119-C, No. 12,* pp1489~1499.

1997    Absaloms H., and T. Tomikawa, 1997, **A Novel Approach to Triangulating Contours for Surface Approximation,** *Trans. IEEJ, Vol. 117-C, No. 6,* pp667~675.

1996    Absaloms H., and T. Tomikawa, 1996, **A Study of Human Eyes' Detection by Window-Pair Chasing,** *Trans. IEEJ, Vol. 116-C, No.9,* pp1015~1028.


*LETTERS/SHORT NOTES:*

1998    Absaloms H., and T. Tomikawa, 1998, **A Genetic Algorithm Solution to Relaxation Labeling of Line Images,** *Trans. IEEJ, Vol. 118-C, No.11*, pp1670~1671.

1997    Absaloms H., and T. Tomikawa, 1997, **Wire-Frame Approximation of Surface from Contour Data by GA,** *Trans. IEEJ, Vol. 117-C, No.2*, pp207~208.


*PROCEEDINGS:*

2006    Oteri M. O., Konditi D. B. O., Ouma H. A., 2006, **Microwave Response to Moisture Content,** *Proc. of 2nd JKUAT Scientific and Technological Conference, JKUAT, Nairobi October 2006*.

2004    Absaloms H., and T. Tomikawa, 2004, **Meta-GA Multi-Window Human Eye Detection,** *Proc. of 8th World Multi-Conference on Systems, Cybernetics and Informatics, SCI 2004, Orlando, Florida, USA, Vol VI pp165~170.*.

1999    Absaloms H., Iwami Y., and T. Tomikawa, 1999, **A Heuristic Approach to Solution of Industrial Optimisation Problems,** *Proc. of 5th Africon Conference in Africa,* IEEE AFRICON '99*, Cape Technikon, Cape Town, South Africa, pp127~130.*.

1998    Absaloms H., and T. Tomikawa, 1998, **Optimization by Genetic Algorithm**, for the *Proc. of 4th KSEEE International Conference, Nairobi, Kenya*.

1997    Absaloms H., and T. Tomikawa, 1997, **Applying Genetic Algorithm to Labeling,** *Proc. of 3rd KSEEE International Conference, Nairobi, Kenya*, pp62~68.

1996    Absaloms H., and T. Tomikawa, 1996, **Surface Reconstruction by Triangulation Using GA,** *Proc. of 20th International Conference on Computers and Industrial Engineering (ICC&IE`96), Kyongju, Korea.,* Vol. 1, pp441~444.

1995    Absaloms H., and T. Tomikawa, 1995, **A Detection Of Human Eyes by Window-Pair Chasing**, *Proc. of 1st KSEEE International Conference, Nairobi, Kenya*, pp205~214.

1993    Absaloms H., **Timer Server Implementation in Computer Communication Protocols,** *Proc. of The Third Annual JKUAT Electrical Engineering Seminar* on "Technological Trends in Electrical and Electronics Engineering," JKUAT, Kenya, Aug 1993

1993    Seneveratne, A., Absaloms, H., Ginige, T. and Fry, M., 1993, **Effect of Timer Management on Protocol Execution Performance**, *Proc. of the 2nd Australian Conference on Telecommunications Software (ACTS'93,) Wollongong, Australia,* pp149~156.


*OTHERS:*

2002    **A Study Of Internet Use In Kenyan Universities**, research project report. A component of the project *'An Exploratory Study Of Internet Use At Institutions of Higher Education: Africa, Asia and Latin-America'* commissioned by UNU/INTECH and The International Institute of Infonomics, The Netherlands.

1998    **Genetic Algorithm Application to Image Processing Optimization Problems,** Ph.D. Dissertation, Kanagawa Institute of Technology, Atsugi, Japan, 1997/1998

1994    **PCB CAD Training Manual** in Training Manual for *Regional Group Training Programme in "Applied Electrical and Electronic Engineering Technology,"* JKUAT, Kenya, March 1994

| 1992 | **Timer Server Implementation in Computer Communication Protocols,** M.Eng. Thesis, University of Technology, Sydney (UTS) Sydney, Australia, July 1992 |
| 1988 | T**he Yagi–Uda Array,** B.Sc. Project Report, University of Nairobi, Nairobi, Kenya, July 1988 |

## CURRICULUM DEVELOPMENT

Involved in developing curricula, especially the Telecommunications component, for

- *BSc. In Electronic and Computer Engineering, Dept. Elec.Engg., JKUAT. 2000.*
- *BSc. In Mechatronic and Precision Engineering, Dept. Mech.Engg., JKUAT. 2000.*
- *Department of Electromechanical Engineering, Kigali Institute of Science Technology and Management (KIST), Kigali, Rwanda. 2000*
- *Proposed Department of Telecommunication & Information Technology, JKUAT. 1999.*

## POLICY DOCUMENTS

Involved in the preparation of the following:

| 2000/1 | JKUAT-KIRDI(NIIC) (Kenya Industrial Research and Development Institute - National Industrial Information Center), "*Network For Dissemination of Industrial and Technological Information*" |
| 2000 | Faculty Of Engineering *"Guidelines, Rules, and Procedures for Conducting Examinations"* |
| 2000 | Faculty Of Engineering *"Transcriber – Academic Transcript Processing Software for Faculty Of Engineering"* |
| 1999 | Faculty Of Engineering *"Post Graduate Programmes and Research Plans in the Year 2000 and Beyond"* |
| 1999 | Faculty Of Engineering *"Proposed Department of Telecommunications and Information Technology"* Blueprint |

## SELECTED SUPERVISED PROJECTS

### PHD:

- ❑ 2001 - 2006: "*Study Of Multimedia Transmission Delay And Jitter Factors*", K. O. Omwenga, JKUAT (incomplete)

### MASTERS:

- ❑ 2006 - 2007: "*Microwave Soil Moisture Measurement and Surface Roughness Characterization: A Case Study of Kenyan Region*", M. O. Oteri, JKUAT
- ❑ 2007 - : "*Effective Mobile Phone Base Station Radiation and Impact on Human Health: An Analysis of Kenya Wireless Communication*", E. E. Mukenya, JKUAT (on-going)
- ❑ 2007 - : "*Electromagnetic Modeling and Analysis of Rectangular Metallic Enclosure with Apertures for EMI/EMC Applications*", J. K. Makiche, JKUAT (on-going)

### UNDERGRADUATE (last 2 years):

- ❑ 2007 - : "LCD Based Temperature Sensor", T. M. Kariithi, UoN
- ❑ 2007 - : "*Burglar Alarm System*", J. K. Kanda, UoN
- ❑ 2007 - : "*Computerized Traffic Light Control*", P. N. Kiarie, UoN
- ❑ 2007 - : "*Complete Campus Card Solution*", M. N. Kamunge, JKUAT
- ❑ 2007 - : "*(Web-based) Home Automation System*", E.G. Kagai, JKUAT
- ❑ 2007 - : "*Office Environment and Access Control using a PC*", J.M. Gicho, JKUAT
- ❑ 2007 - : "*Finger-print based Smart Card Physical Access System*", J.M. Ndambuki, JKUAT
- ❑ 2006 - : "*Biometrics Identification System*", A. N. Njenga, JKUAT

## COMMITTEES

| 2007 – Present | School of Engineering, Examinations Timetabling Committee, UoN |
| 2001 – 2006 | JKUAT Senate |
| 2000 - | University Internet Service Development Committee |
| 2000 - | Faculty of Engineering, KIRDI-JKUAT Sub-Group on Industrial Information Network/Center |
| 2000 | Faculty of Engineering, Ad hoc Committee on Examination Cheating |
| 1999 | Faculty of Engineering, Ad hoc Committee on Postgraduate Studies and Research Plans |
| 1999 | Department of Electrical & Electronic Engineering, Committee on the Proposed Telecommunications Department |
| 1998 | Faculty of Engineering, Sub-Committee on the Proposed Telecommunications Department |

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|---|---|
| June 2007-<br>Present | **Senior Lecturer,** Electrical & Information Engineering, University of Nairobi.. Lecturing mainly in Telecommunications Engineering (Digital Systems Design, Signals and Communication, Transmission Line Theory). |

Other activities include:
- Supervision of Ph.D. research
- Supervision of Masters' research students
- Supervision of Undergraduate Final Year Student Projects
- Course Tutor/Advisor for Undergraduate Students
- Examinations Co-ordination

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|---|---|
| Mar 2008-<br>Present | **Departmental Examinations Coordinator.** |

Duties include: **C**ollection and organization of exam drafts for external moderation, organization of moderated papers for printing, time-tabling of examinations and invigilation, supervising of examinations and invigilation, collection and processing of marked examinations into documents for the departmental and faculty boards of examinations.

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| Mar 2008-<br>Present | **School of Engineering Examination Timetabling Committee Convenor.** |

Duties include: Chairing the school timetabling committee and Synchronization of examinations between the departments through timetabling.

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| Nov 2001-<br>Apr 2006 | **Director, JKUAT Nairobi Centre.** *Administrative and Academic Head* |

Duties include:
- Establishment of the learning centre through design, refurbishment and equipping for operation
- Coordination of all administrative functions
- Management of human, financial, and material resources of the Centre
- Planning for the growth and development of the Centre staff, infrastructure and programs
- Identification of suitable academic programs for approval by Senate
- Implementation and running of academic programs
- Coordination of academic programs at the Centre with Academic department heads

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| Apr 2001-<br>June 2002 | **Program Coordinator,** *Bachelor Of Science in Electronic and Computer Engineering.* Duties include: |

- Overall interpretation and implementation of the syllabus,
- Development of suitable course material including laboratory/practical work for each course in the syllabus,
- Compilation of comprehensive book and equipment lists for the program,
- Procurement of unavailable books and equipment,
- Promotion of the program to industry, relevant governmental bodies, private sector, statutory and professional bodies,
- Sensitization of the public on the program objectives and the subsequent career prospects,
- Preparation of a detailed development plan for the program with regard to staff, physical facilities, equipment and organization
- Ensuring the day-to-day smooth running of the program.

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|---|---|
| July 2001-<br>June 2007 | **Senior Lecturer,** Electrical & Electronic Engineering, Jomo Kenyatta University of Agriculture and Technology. Lecturing mainly in Telecommunications Engineering (Digital Systems Design, Signals and Communication, Transmission Line Theory). |

Other activities include:
- Supervision of Ph.D. research
  - 2001 - : "*Study of Multimedia Transmission Delay And Jitter Factors*", K. O. Omwenga
- Supervision of Masters' research students
- Co-ordination of new Undergraduate Program - *Bachelor of Science in Electronic & Computer Engineering*
- Supervision of Undergraduate and Diploma Final Year Student Projects
- Course Tutor/Advisor for Undergraduate Students

- Curriculum development

**Sept 1998-**
**June 2001**    **Lecturer,** Electrical & Electronic Engineering, Jomo Kenyatta University of Agriculture and Technology. Lecturing mainly in Telecommunications Engineering (Digital Systems Design, Signals and Communication, Transmission Line Theory).

> Other activities include:
> - Supervision of Ph.D. research
>   - ❑ 2001 - : "*Study Of Multimedia Transmission Delay And Jitter Factors*", K. O. Omwenga
> - Supervision of Undergraduate and Diploma Final Year Student Projects
> - Course Tutor/Advisor for Undergraduate Students
> - Curriculum development

**Sep 1998-**
**Apr 2002**    **Departmental Examinations Coordinator,** In charge of collection and organization of exam drafts for external moderation, organization of moderated papers for printing, time-tabling of examinations and invigilation, supervising of examinations and invigilation, collection and processing of marked examinations into documents for the departmental and faculty boards of examinations.

**Jul 1999-**
**Mar 2000**    **Research Specialist,** Consultant for *Thinking Systems Limited*, a subsidiary of MindSmith Technologies Inc. Specializing in providing cutting edge engineering solutions especially through the design and implementation of hardware and software solutions for industrial and corporate security systems, inventory control systems, time and attendance systems, networked computing and telecommunications. System designs involved in include:

- A countrywide distance learning network for in-service training of Nurses through the use of multimedia stations set up in major learning centers spread through the country;
- Computerised patient billing system coupled with stock and inventory control for use in a network of health centers around the country.

**Oct 1992-**
**Sept 1998**    **Assistant Lecturer,** Electrical & Electronic Engineering, Jomo Kenyatta University of Agriculture and Technology. Lecturing mainly in Telecommunications Engineering (Signals and Communication, Telecommunications, Electronics .

> Oct 1994 - Apr 1998
> **On Study Leave**. Undertook tutorial/seminar classes for 3rd Year Undergraduate & 1st year Postgraduate students while undertaking Ph.D. research at the Kanagawa Institute of Technology in Japan.

**Nov 1991 -**
**Feb 1992**    **Programmer,** School of Electrical Engineering, University of Technology Sydney, Australia. Duties involved Software Design and Development in the area of Computer Communication Protocols.

**Mar 1991 -**
**Oct 1991**    **Researcher,** The Illawarra Technology Corporation Limited, Wollongong, Australia. Project under contract from Overseas Telecommunications Corporation (OTC) Australia. Duties involved Software Design and Development in the area of Computer Communication Protocols.

**Aug 1989 -**
**Dec 1989**    **Development Engineer,** Kenya Broadcasting Corporation (KBC). Member of Research and Development Team for the KBC.

**Jan 1989 -**
**Aug 1989**    **Assistant Engineer,** Ministry of Public Works, Kenya. Responsibilities include the design and supervision of electrical works, and inspection & maintenance of government electrical installations e.g. lifts in government buildings.

## AWARDS

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| 1994 | **Japanese Government (Monbusho) Scholarship** to undertake Ph.D. degree course at the Kanagawa Institute of Technology, Japan. |
| 1990 | **Australia International Development Assistance Bureau (AIDAB) Scholarship** to undertake a Masters of Engineering degree at the University of Technology, Sydney (UTS,) Australia. |
| 1989 | **Gandhi Smarak Nidhi Trustee Fund Merit Award**, 1987/1988, for the best student in the Faculty of Engineering of the University of Nairobi. |
| 1989 | **Institute of Engineers of Kenya (IEK) Prize**, 1987/1988, for the best final year project in the Department of Electrical Engineering of the University of Nairobi. |

## SKILLS

Computer:

*Expertise in:* Programming (C language) Word-processing & DTP (WordPerfect, Word for Windows, PageMaker) Spreadsheet (Microsoft Excel,) and Drawing (Lotus Freelance, Microsoft PaintBrush)

*Familiarity with:* Windows OS and tools, MS-DOS and UNIX O/S (through Apollo's Domain OS and Sun Microsystems' OpenWindows, SunView & XView), Linux, Pascal, C++ and BASIC programming languages, Assembler programming (on TMS32010 and Intel 8086/8088 family of Microprocessors), CSIM simulation package, MATLAB, PSpice, Lotus 1-2-3 spreadsheet, Dbase, Harvard Graphics and AutoCAD, HTML programming, Web Design with HoTMetaL, TextPad, DreamWeaver, and Microsoft FrontPage

*Acquainted with:* Design Packages (Adobe PhotoShop, CorelDraw), Object Oriented Programming (Delphi, Visual Basic), Databases (Interbase, Access)

Language:

Dholuo, English, Swahili, Japanese (Intermediate level)

## EXTRACURRICULAR

Christian fellowship activities

Enjoy most outdoor sports and activities, theatre, leisure reading, crosswords, puzzles etc.

*Participated in competitive Hockey and Handball as well as Basketball at University of Nairobi, 1985 - 1989. Competitive Hockey and Athletics at High School level.*

## REFEREES

**1. Dr. Livingstone M Ngoo**
Chairman, Electrical and Electronic Engineering Dept.,JKUAT, Box 62000 – 00200 Nairobi, Kenya
(mwalungoo@yahoo.com)

**2. Prof. Alfred V Otieno**
Department of Electrical and Communications Technology, Moi University, Box 43047 Eldoret, Kenya

**3. Prof. Takehiko Tomikawa**
Kanagawa Institute of Technology, 1030 Shimo-Ogino, Atsugi, 243-0292 Japan
(tomikawa@ic.kanagawa-it.ac.jp)