

# SAMUEL KARANJA KABINI

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## OBJECTIVE

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I am a multidisciplinary Engineer with excellent problem solving abilities. I am creative, innovative and have gained hands on experience through practice. Through my research and work, I have gained extensive knowledge of production and manufacturing engineering, product design, among many other components of Mechatronics Engineering. I am also an effective team player who builds positive and cohesive relationships with colleagues. Above all, I am always eager to take up challenging tasks that enable me to apply acquired skills, knowledge and potential in enhancing my service towards meeting individual and organizational goals.

## EXPERIENCE

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| <b>Ag. Dean and Lecturer, Murang'a University of Technology (MUT)</b><br>Management of School of Engineering and Technology at MUT<br>Coordination and running of the School of Engineering activities<br>Teaching and supervising students. Carrying out research.<br>Administering, invigilating and marking undergraduate and postgraduate examinations. Conducting laboratories and supervision of Bachelor's Master's and Doctorate projects. | September 2018 - To date     |
| <b>Assistant Lecturer, JKUAT</b><br>Teaching and offering tutorials. Carrying out research.<br>Administering, invigilating and marking undergraduate examinations. Conducting laboratories and supervision of attachment and final year Bachelor's projects.   | September 2011 - August 2018 |
| <b>Teaching Assistant, JKUAT</b><br>Teaching and offering tutorials. Carrying out research and assisting in duties such as invigilation of examination, conducting of laboratories, grading of industrial trips' reports and supervision of attachment. Coordination of External and Internal practical attachment   | October 2008 - August 2011   |
| <b>Electrical Engineer, Nimrod Fire Services Ltd.</b><br>Coordination of installation, commissioning and servicing of fire alarm systems. Supervision of the field services such as sales and installations of the fire alarm systems.   | April 2008 - September 2008  |
| <b>Design and Production Engineer, Cadvision Mold Services Ltd.</b><br>Duties included design and production of molds using CAD/CAM systems and CNC machines, supervision and co-ordination of the production process for the molds and project management.  | September 2007 - March 2008  |

## EDUCATION

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| <b>PhD in Mechatronic Engineering, JKUAT</b><br>Thesis Title: Optimization of Electrical Discharge Machining Process<br>Using an Adaptive Controller Based on Fuzzy Logic<br><b>Supervisors:</b> Prof. Eng. B. Ikua, Prof. Eng. J. Kihui and Prof. G. Nyakoe<br>Area of Study: Intelligent control and optimization of machining processes. | May 2014 - June 2018 |
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**M.Sc. in Mechatronic Engineering, JKUAT**

September 2008 - July 2011

Thesis Title: Design of an Adaptive Fuzzy Logic Controller for  
Cylindrical Plunge Grinding Process

**Supervisors:** Dr. Eng. B. W. Ikua and Dr. G. N. Nyakoe

Area of Study: Intelligent control and optimization of machining processes.

**B.Sc. in Mechatronic Engineering, JKUAT**

April 2002 - July 2007

Graduated with second class honours (upper division) degree

B.Sc. Project title: Design and development of a CNC milling machine.

**Kenya Certificate of Secondary Education (K.C.S.E), Njiiri School**

January 1997 - December 2002

K.C.S.E certificate, grade B+ (Plus)

**Kenya Certificate of Primary Education (K.C.P.E), Gathungururu**

January 1989 - December 1996

K.C.P.E certificate, grade A– (Minus)

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**PROFESSIONAL AFFILIATION**

Registered with **Engineers Board of Kenya (EBK)** as a **Professional Engineer** (Membership No. A3131)  
Registered with The **Institution of Engineers of Kenya (IEK)** as a **Corporate Member** (Membership No. M-4651)

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**SKILLS AND INTERESTS**

<b>Skills</b>	Production, Manufacturing and Control Engineering,
<b>Interests</b>	Computer Aided Design and Manufacturing, Control, Measurement and Instrumentation, Programmable Logic Controllers (PLC's) and SCADA Systems
<b>Software Competence</b>	Autodesk Inventor, SolidWorks, Mastercam, Labview and Proteus
<b>Platforms</b>	MS Office, MS Project

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**PROJECTS****Development of a Multi-Operation Machine for Jua Kali Artisans**

May 2018 - April 2019

*Major Project*

- A project aimed at providing the Jua Kali artisans with an affordable, easy to operate and maintain equipment capable of carrying out several machining operations
- It is Funded by JICA
- Design and fabrication is done locally
- Offers improved work safety and professionalism
- Aims at improving the quality of products from the Jua Kali artisans and enhancing their earnings.

**Design Review of Koko Point for Koko Networks Ltd.**

February 2018 - July 2018

*Major Project*

- An industrial designed product in collaboration with KOKO Networks
- Main aim of the project was to carry out design review and audit to make the product meet customer needs.

**Development of a Plastic Waste Recycling Machine**

May 2018 - June 2020

Machine design is in collaboration with Plasti Packaging Industries

- Main aim of the project is to recycle plastic waste and hence reduce environmental degradation
- All work of design and fabrication is undertaken locally

*Major Project*

- Project aim: To develop a local solution for plastic packaging
- Design and fabrication work done locally
- Project was funded by JKUAT research fund

**BOOK**

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1. Kabini S. K., Ikua B. W., Nyakoe G. N. "Application of Adaptive Neural Fuzzy Inference Systems in Machining: Cylindrical Grinding Process as a Case Study" ISBN: 978-3-8465-0342-3, Lambert Academic Publishing, Germany.

**JOURNAL PAPERS**

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1. **Kabini S. K.**, Bernard W. Ikua, John M. Kihui, George N. Nyakoe and Patrick C. Kipkosgei "Evaluation of the Performance of a Transistorised Pulse Generation Circuit in Electrical Discharge Machining" Journal of Sustainable Research in Engineering Vol. 3(4), 2017, ISSN 2409-1243.
2. **Kabini S. K.**, Bojer S. K., Ikua B. W., Kihui J. M. Nyakoe G. N. and Mwangi J. W. "The performance of an RC type pulse generation circuit in electrical discharge machining", Journal of Sustainable Research in Engineering, Vol. 2 No. 4, ISSN 2409-1243 (Online) (2015).
3. Mwangi J. W., Ikua B. W., Nyakoe G. N., Zeidler H. and **Kabini S. K.** "Effect of low frequency vibration in electrical discharge machining of AlSiC metal matrix composite", Journal of Sustainable Research in Engineering, Vol. 1 Issue 1, ISSN 2409-1243 (Online) (2014).
4. **Kabini S. K.**, Ikua B. W., Nyakoe G. N. "Recent trends in modeling and control of chatter vibration in cylindrical plunge grinding process", International Journal of Advances in Engineering Science and Technology, Vol. 2 No. 3, ISSN 2249-913X (Oct. 2012).
5. **Kabini S. K.**, Ikua B. W., Nyakoe G. N. "Design of an adaptive controller for cylindrical plunge grinding process" Innovative Systems Design and Engineering Journal, Vol. 2 No. 4, ISSN 2222-1727 (Paper) ISSN 2222-2871 (Online) (2011).
6. **Kabini S. K.**, Ikua B. W., Nyakoe G. N. "Dynamic modeling of chatter vibration in cylindrical plunge grinding process " Innovative Systems Design and Engineering Journal, Vol. 2 No. 4, ISSN 2222-1727 (Paper) ISSN 2222-2871 (Online) (2011).

**CONFERENCE PAPERS**

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1. Kipkosgei P. C., **Kabini S. K.** and Ikua B. W. "A Technical Report on Design of a Transistor Based Pulse Generation Circuit for Electrical Discharge Machine" Proceedings of the Sustainable Research and Innovation (SRI) Conference, May 2017, ISSN 2079-6226.
2. **Kabini S. K.**, Bojer S. K., Ikua B. W., Kihui J. M. Nyakoe G. N. and Mwangi J. W. "Effect of capacitance on electrical discharge machining using an RC type pulse generation circuit", Proceedings of the Sustainable Research and Innovation (SRI) Conference, May 2015, ISSN 2079-6226.
3. Mwangi J. W., Ikua B. W., Nyakoe G. N., Zeidler H. and **Kabini S. K.** "Effect of Dielectric Fluid and Vibration on Performance in Electrical Discharge Machining of AlSiC Metal Matrix Composites" Proceedings of the Sustainable Research and Innovation(SRI) Conference May 2014, ISSN 2079-6226.
4. **Kabini S. K.** Wanjiru E. M. Makenzi M. M. "Adaptive Neural Fuzzy Inference Systems: A Review" Proceedings of the KSEEE-JSAEM International Engineering Conference, August 2012.
5. **Kabini S. K.**, Wanjiru E. M. Makenzi M. M. "Optimization of EDM Material Removal Rate of Mild Steel Using Permanent-Magnets" Proceedings of the KSEEE-JSAEM International Engineering Conference, August 2012.
6. **Kabini S. K.**, Wanjiru E. M. Makenzi M. M. "Piezoelectric Energy Scavenging Using Low Energy Sources" Proceedings of the KSEEE-JSAEM International Engineering Conference, August 2012.

7. **Kabini S. K.**, Ikua B. W., Nyakoe G. N. “Modeling of chatter vibration in cylindrical plunge grinding process” 6<sup>th</sup> Annual International Conference Proceedings, Moi University 2010.
8. **Kabini S. K.**, Ikua B. W., Nyakoe G. N. “Review of ANFIS and its application in control of machining processes” 2011 Mechanical Engineering Annual Conference on Sustainable Research and innovation, ISSN 2079-6226.

## AWARD

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Awarded third best innovation by JICA for the innovation project titled ”Development of a Multipurpose Machine for Small Scale Workshops”

## PROFESSIONAL TRAINING

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- Certificate in programming, installation and maintenance of Programmable Logic Controllers
- Basic course in Siemens Simatic Step 7
- Advanced course in Siemens Simatic Step 7
- Course in SCADA systems

## RESEARCH INTERESTS

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Manufacturing systems, control systems, computer aided design and computer aided manufacturing.

## REFERNCEES

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- Prof. Eng. B. W. Ikua, *PhD/M.Sc. Project Supervisor*  
Department of Mechatronic Engineering, JKUAT  
P.O. Box 62000-00200, Nairobi, Kenya  
Email: ikua\_bw@eng.jkuat.ac.ke
- Dr-Ing. James Kuria Kimotho  
Lecturer, Department of Mechanical Engineering, JKUAT  
P.O. Box 62000-00200, Nairobi, Kenya  
Tel: 0703155618 Email: kushkim05@gmail.com
- Mr. Francis Gathura  
Managing Director Cadvision Mould Services Ltd.  
P.O Box 17468-00200, Nairobi  
Tel: 0722808147 Email: gathuraf@yahoo.com