



**Kanishka Aman Singh** (He/Him) · 3rd

Founding Member, Vice-President & COO

Dayton, Ohio, United States · [Contact info](#)

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MCARTech, Inc.

Iowa State University

### About

I am a founding member, Vice-President & COO at MCARTech, Inc., a reliability company, specializing in equipment diagnostics and predicting equipment failure to improve operational reliability. I have worked in different Research, Design, and Engineering positions at various organizations worldwide. I graduated from Iowa State University with a Ph.D. in Electrical Engineering. My interests include renewable energy and non-conventional energy generation/harvesting, system and equipment reliability, control systems and power electronics.

### Activity

612 followers

Kanishka Aman Singh commented on a post · 5d  
Congratulations, Sougata! Interesting.



218

31 comments

Kanishka Aman Singh commented on a post · 2w  
Congrats, Ankit.



329

101 comments · 1 repost

[Show all activity →](#)

### Experience

#### Founding Member, Vice-President & COO

MCARTech, Inc. · Full-time  
Jun 2018 - Present · 4 yrs 9 mos

MCARTech, Inc. specializes in machine diagnostics and predicting equipment failure to help clients improve reliability and prevent unplanned stoppages. The solutions are customized for every ...see more

**Skills:** Cross-functional Team Leadership · Interpersonal Skills · Technical Presentations · Electric Motors · Design Failure Mode and Effect Analysis (DFMEA) · Technical Reviews · Power Systems · Pow ...see more

#### Design Engineer - Nuclear

NextEra Energy, Inc.  
Feb 2016 - May 2018 · 2 yrs 4 mos  
Seabrook, NH

As a Design Engineer in the Electrical/I&C group, I ensured that the design basis of the nuclear station is maintained. I worked on projects which helped maintain or improve reliability of operation. I w ...see more

**Skills:** Interpersonal Skills · Technical Presentations · Electric Motors · Technical Reviews · Power Systems · Power Generation · Microsoft Office · Problem Solving · Electrical Equipment · Tech ...see more

#### Iowa State University

4 yrs 5 mos  
Ames, IA, USA

##### Graduate Research Assistant

Jan 2012 - Dec 2015 · 4 yrs

\* Advisors: Prof. Ratnesh Kumar (IEEE Fellow) and Emeritus Prof. Robert Weber (IEEE Fellow).  
\* Ph.D. research topic: Harvesting energy from ambient vibrations using piezoelectric-based ...see more

**Skills:** Interpersonal Skills · Technical Presentations · Microsoft Office · Problem Solving · Electrical Equipment · Research and Development (R&D) · Product Development · Technical Understandi ...see more

##### Graduate Teaching Assistant

Aug 2011 - Dec 2011 · 5 mos

\* Course: Introduction to Circuits, Instruments, AC-Circuits and Motors  
\* Responsibilities: Teaching/instructing students in lab; grading lab assignments, homework a ...see more

**Skills:** Interpersonal Skills · Technical Presentations · Microsoft Office · Problem Solving · Electrical Equipment · Technical Understanding · Communication

#### Summer Intern

NextEra Energy, Inc.  
Jun 2015 - Aug 2015 · 3 mos  
Palo, IA

\* As Design Engineer intern at a Nuclear power plant, resolving design and engineering problems.  
\* Reviewing/verifying engineering and control documents, helping in conversion of plant database.

**Skills:** Interpersonal Skills · Technical Presentations · Technical Reviews · Power Systems · Power Generation · Microsoft Office · Problem Solving · Technical Understanding

#### Engineer

Bharat Heavy Electricals Limited  
Jul 2010 - Jul 2011 · 1 yr 1 mo  
Electronics Division, Bangalore, India.

Design Engineer, Hydro Controls, Electronic Division, Bharat Heavy Electricals Limited.  
\* Acquired experience of working at one of India's largest engineering and manufacturing con ...see more

Skills: Interpersonal Skills · Technical Presentations · Technical Reviews · Power Systems · Renewable Energy · Power Generation · Microsoft Office · Problem Solving · Electrical Equipment · Resea ...see more

Show all 7 experiences →

## Education



### Iowa State University

Ph.D., Electrical

2011 - 2015

Activities and societies: Mentor, Iowa State University Engineering Mentors Program: Mentoring undergraduate students in academic and social life at ISU, with emphasis on differ ...see more

Graduate research under Prof. Ratnesh Kumar (IEEE Fellow) and Emeritus Prof. Robert Weber (IEEE Fellow).

Skills: Interpersonal Skills · Microsoft Office



### Indian Institute of Technology, Kanpur

B.Tech.-M.Tech. Dual, Electrical/RF & Microwaves

2005 - 2010

Activities and societies: Captain (2009) and member, Institute Football Team, 2005-2010. Sports Secretary, Hall of Residence 2, 2006-2007. ...see more

Bachelor of Technology - Master of Technology in Electrical Engineering.  
Master's Thesis: A Comparative Study on Some Commonly Used Active Inductor Configuratic ...see more

Skills: Interpersonal Skills · Microsoft Office

## Licenses & certifications



### Duolingo Spanish Fluency: Intermediate (Estimated)

Duolingo

Issued May 2016

Show credential ↗

## Volunteering



### Volunteer

Minimum Wage Monitoring Committee, IIT Kanpur, India

May 2006 - May 2010 · 4 yrs 1 mo

Human Rights

Help workers with menial wages in the campus receive fair pay and improved work conditions.

## Skills

### Matlab



Endorsed by Agnivo Gosai and 1 other who is highly skilled at this



Endorsed by 6 colleagues at Iowa State University



13 endorsements

### Algorithms



Endorsed by Arko Mukherjee, PhD who is highly skilled at this



Endorsed by 5 colleagues at Iowa State University



8 endorsements

### Electronics



Endorsed by 2 colleagues at Iowa State University



4 endorsements

Show all 43 skills →

## Recommendations

Received Given

### Nothing to see for now

Recommendations that Kanishka Aman receives will appear here.

## Publications

### Remote Monitoring of Critical Systems in Overhead Cranes Using Wireless Data Telemetry

IEEE Midwest Industry Conference 2020 · Sep 30, 2020

Show publication ↗

In recent years, Industry 4.0 and Industrial Internet of Things have provided a strong enabling toolset to the reliability efforts of various industries. An important aspect in these efforts is the acquisition of releva ...see more

### A Self-propelled Mechanism to Increase Range of Bistable Operation of a Piezoelectric Cantilever-based Vibration Energy Harvester.

IEEE Transactions on Ultrasonics, Ferroelectrics, and Frequency Control · Nov 1, 2018

Show publication ↗

In our previous works, we presented a method to increase the harvested energy from vibrations using a piezoelectric cantilever and to increase the frequency range of operation by introducing bistability wit ...see more

### Other authors



### A Broadband Bistable Piezoelectric Energy Harvester with Nonlinear High-Power Extraction

Show publication ↗

This paper presents a nonlinear vibration energy harvester, which combines a nonlinear bistable broadband piezoelectric cantilever used to transduce ambient vibration energy, with synchronized capture for eff ...see more

Other authors



Show all 5 publications →

### Patents

#### Broad Spectrum and Wide Amplitude Range Vibration Energy Harvester: Bistable Piezoelectric Transduction, Synchronized Extraction, Self-Actuated Adaptation

US 10,224,835 B1 · Issued Mar 5, 2019

See patent

The invention relates to a bistable piezoelectric cantilever-based vibration energy harvester that increases the energy harvested over a broad frequency of vibrations by introducing bistability to the cantilever thro ...see more

Other inventors



### Projects

#### Piezoelectric-based Broadband Bistable Vibration Energy Harvester and SCE/SSHI-based High-Power Extraction

Aug 2011 - Present

Associated with Iowa State University

\* Developed improved and more accurate model for nonlinear bistable harvester using standard Butterworth van Dyke piezoelectric model. ...see more

#### A Comparative Study on Some Commonly Used Active Inductor Configurations in 0.35- $\mu$ m CMOS Technology with Improved Quality Factor

Dec 2008 - May 2010

Associated with Indian Institute of Technology, Kanpur

\* Compared four configurations, namely Active Inductors with Resistive Feedback, with Active Feedback, with Series Resistance Insensitive to Frequency, and Tunable Active Inductor, on the basis of factors such i ...see more

#### Performance Evaluation of an Anechoic Chamber using Standing Wave Techniques

Sep 2008 - Nov 2008

Associated with Indian Institute of Technology, Kanpur

\* Employed voltage standing wave ratio (VSWR) technique to measure level of reflected waves present in the "quiet zone" of the chamber. ...see more

Show all 5 projects →

### Honors & awards

#### Best Student Paper Finalist Award

Issued by IEEE Systems, Man and Cybernetics Society - IEEE International Conference on Networking, Sensing and Control · Apr 2014

Associated with Iowa State University

Awarded for the paper titled "Piezoelectric-based Broadband Bistable Vibration Energy Harvester and SCE/SSHI-based High-Power Extraction" at the 11th IEEE International Conference on Networking, Sensing and Control.

#### Special Appreciation

Issued by Games and Sports Council, Indian Institute of Technology, Kanpur, India. · May 2010

Associated with Indian Institute of Technology, Kanpur

For contribution to Institute Football Team.

#### Sports Scholarship

Issued by Student Gymkhana, Indian Institute of Technology, Kanpur, India. · Jan 2009

Associated with Indian Institute of Technology, Kanpur

For excellence in sports (Football).

Show all 5 honors & awards →

### Languages

#### Bengali

Native or bilingual proficiency

#### English

Native or bilingual proficiency

#### Hindi

Native or bilingual proficiency

Show all 4 languages →

### Organizations

#### Iowa State University Engineering Mentors Program

Volunteer · Aug 2014 - May 2015

Associated with Iowa State University

\* Mentoring undergraduate students in academic and social life at ISU, with emphasis on different cultures.

**Institute Soccer Team, Indian Institute of Technology, Kanpur, India**

Member (2005-2010), Captain (2009-2010) · Aug 2005 – May 2010

 Associated with Indian Institute of Technology, Kanpur

\* Captained team to first-ever Gold in an away tournament at MNIT Sports Tournament, Jalpur; first-ever medal (Silver) in Kanpur Senior District Soccer League; Silver in Inter IIT Sports Meet, 2009. [...see more](#)

**Minimum Wage Monitoring Committee**

Volunteer · Jan 2006 – Jan 2010

 Associated with Indian Institute of Technology, Kanpur

\* Helped workers with menial wages in the university campus receive fair pay and improved work conditions.

[Show all 7 organizations →](#)

**Interests**

Companies   Groups   Schools



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**Iowa State University**  
231,436 followers

[+ Follow](#)

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