PICT ACM STUDENT CHAPTER ANNUAL REPORT 2017-18

This document is a report of the activities of the PICT ACM Students Chapter (PASC) during the year 2017-18. In this report, we explain and list the various activities carried out by the chapter in terms of social outreach, membership drives, technical events, non-technical events, Workshops, SIGs, Seminars, Webinars, Projects and Research papers of our members.

- Chapter Information:
  a. Chapter Name: PICT ACM Student Chapter (PASC)
  b. Group ID: 156922
  c. Client Number: 5517732
  d. Chapter Type: Student
  e. Chapter Address: Pune Institute of Computer Technology, Dhankawdi, Pune-43.
  f. Chapter Charter Date: December 19, 2016
  g. Number of Chapter Members: 215
  h. Chapter Website: http://pict.acm.org
  i. Chapter’s Contact Mail: acm.pict@gmail.com
  j. Chapter Faculty Advisor: Dr.G.V.Kale
     Faculty Advisor’s Contact Mail: gvkale@pict.edu
  k. Chapter Chairman: Mr. Chinmay Saraf
     Contact Mail: saraf@acm.org
  l. Chapter Vice-Chairman: Mr. Devashish Khairnar
     Contact Mail: silverzone.dev@gmail.com
  m. Chapter Treasurer: Mr. Anuj Agrawal
     Contact Mail: anujagrawal610@gmail.com
  n. Chapter Secretary: Ms. Minal Mallawat
     Contact Mail: mmallawat97@gmail.com
Annual Technical – Non-technical Event – Pulzion’17:

Pulzion is a platform created for the conduction of various technical and non-technical events of PICT ACM Student’s Chapter. Pulzion 2017 - an event sponsored by GitLab, reached great heights with a footfall of over 3000 to compete in thirteen events of varied domains and attend workshops and seminars. The well-received competitions catered to competitive coders, networking lovers, circuit designers, creative writers, cricket enthusiasts, TV Series fans and business minds among others. The highlight of Pulzion'17 was a two day workshop on Ethical Hacking in association with Cybercure Solutions. Around 150 students attended the workshop and were enthralled by the exposure the workshop provided them. The workshop received a positive response with the attendees receiving a hands-on experience of dealing with various malwares and their security measures. The inaugural ceremony of Pulzion'17 was followed by an awe-inspiring talk by Mr. Yashwant Kanetkar on "Programming for Campus Success." An elite crowd of 200 comprising renowned teachers and students from all across Pune was marveled by Mr. Kanetkar’s immense knowledge and innate sense of humor.

Pulzion17 website: [www.pulzion17.com](http://www.pulzion17.com)
ACM Women in Computing:

With a view to commemorate women and their legendary achievements, PICT ACM Student Chapter, in association with ACM-W India and ACM Pune Professional Chapter, organized an unique event - Celebration of Women in Computing on Saturday, 24th February, 2018.

The objective of this ceremony was to spread awareness about women empowerment and to encourage women to attain great feats in technical domain by applauding and appreciating their talents. We organized this event to provide a platform for interaction with eminent individuals wherein they can learn about the various challenges and how one can overcome them.
There were various competitions organized for the participants which included JustCoding, Tech MCQ’s Test, Cerebro, BollyQuiz and Insight. The well-received competitions catered to competitive coders, creative writers and Bollywood movie fans. There were various side events for fun and entertainment.

We were graced with the presence of these renowned speakers:

1. Dr. Indira Parikh  
   Former Dean, IIM-Ahmedabad  
   Founder President, FLAME

2. Dr. Swati Sardesai  
   Ex- Deputy Director General and Scientist, National Informatics Centre, Pune

3. Mrs. Shailaja Gaur  
   Vice President, Deutsche Bank, Pune

4. Mrs. Pranjal Gundesha  
   Founder and CEO, Intelligenceplus, Pune  
   Founder of an education based company with a vision to empower every child with life skills in addition to basic academic skills.

With the cooperation of all the members of the PASC and the guidance of our teachers, the event was a huge success.

Website: [http://pict.acm.org/ACM-W/](http://pict.acm.org/ACM-W/)
Participation in ACM India Activities:

PICT ACM Student’s Chapter participates in various activities of ACM-India throughout the year.

1. ACM India Annual Event-2018:

ACM India has been organizing annual flagship events to discuss trends in science and technology, and to celebrate ACM’s spirit and India’s accomplishments in computing. This event is attended by ACM Turing Award winners, ACM Office Bearers, researchers and IT professionals. PICT ACM Student’s Chapter received Best ACM Student Chapter of India award-2018 in this event. Our 3 chapter representatives and chapter counselor attended the event on 16th Feb. 2018 at Nagpur, India.

2. IRISS-2018:

IRISS invites CS-research scholars in India to showcase their (published/accepted, attach proof of acceptance) work to a conclave of researchers and potential employers. The event hosts oral as well as poster presentations. Our chapter former Chairman Mr. Shlok Gilda was selected for poster presentation for IRISS-2018. He presented his poster on “Source code classification using Convolutional Neural Network”.
3. Grace Hopper Conference 2017:

The Grace Hopper Celebration India is India's largest gathering of women technologists, in partnership with ACM India. This year’s conference which was held in Bangalore on 16th and 17th of November 2017 was attended by PASC members Ms. Pallavi Bansal, Ms. Vaishnavi Kasturkar and Dr. G.V. Kale.
4. **CSPathshala Workshop:**

CSPathshala (cspathshala.org), an Association for Computing Machinery India (ACM India) initiative, brings a modern computing curriculum to Indian schools. CSPathshala organized a free training workshop for computing teachers on 4th February, 2017. The workshop featured activities related to problem solving and computational thinking as well as curriculum for 2017-18 for grades 1-8. CSPathshala is a completely volunteer driven initiative. We are proud to be a part of this noble initiative taken up by CSPathshala.

5. **ACM COMPUTE 2017:**

COMPUTE, a peer reviewed conference, is the flagship conference of the ACM India Council. COMPUTE 2017 was hosted by Department of Computer Science and Engineering, Sagar Institute of Research and Technology (SIRT), Bhopal with ACM SIRT Student Chapter from 16th to 17th November 2017. PASC member Mr. Sarang Mahajan attended this conference as PASC representative.

- **Chapter Activities:**

  PICT ACM Student’s Chapter is active throughout the year in various activities like membership drive, SIGs, Seminars, Workshops, etc. Our aim behind these activities is to make our members technically strong in various domains like Web-app Development, Android-app Development, Cyber Security, Machine Learning, etc.

1. **Membership Drive:**

   In January 2017 we conducted membership drive of ACM in our college. We received nearly 200 new registrations for ACM as well as PASC membership, which is nearly 600% increment from last year’s membership drive. Also, another membership drive was conducted in September 2017. We received 70 new registrations from this drive.
2. **PASC Hackathon-2017:**

PICT ACM Student’s Chapter conducts Hackathon annually specially for first year and second year engineering students to encourage them for software development. We received participation of around 25 teams for the hackathon. Participants developed projects on different technologies like Android, Web, Python, etc within 12 hours of duration.

3. **Mindsweeper:**

Mindsweeper which is non-technical event held on 15\textsuperscript{th} March 2018, consisting of solving brainstorming questions and aptitude test. Duration of event was 45 mins solving questions using paper and pen. We got participation of 50 participants.
4. SIGs and Seminars:

4.1. Technical Paper Writing Seminar:

The seminar was conducted by Rajvardhan Oak, who has 1 technical paper published in IEEE, 2 in Springer and 1 in Inderscience to his credit on 3rd February 2018.

An insight on the entire procedure of publishing a research paper was given; right from identifying the domain and gathering statistics, citations to presenting it. An overview of an ideal paper along with the format [Abstract-Introduction-Proposed work-Results-References] was given. It was substantiated with the speaker's paper on Authentication using Behavioral Biometrics.

Guidelines for choosing the publications and conferences to publish papers were also given. After covering all aspects of this procedure, doubts were cleared and the speaker signed off by expecting more PASC members to come up with research papers!
4.2. Web Development (HTML-CSS):

A one day SIG was conducted on basics of web development for 1st year and 2nd year students on 14th September, 2017. It included front of web development. Basics HTML, CSS were covered in session.

4.3. Android App Development:

A one day SIG was conducted by Chinmay Saraf and Siddharth Sabadra, PASC Android developers, on 19th of September 2017. It included basics of Android development using Android studio and developing a simple static application.

4.4. Cyber Security:

A series of cyber security SIGs were conducted in the month of September and October on alternate Saturday and Sunday by Mr.Shlok Gilda, PASC Cyber Security Head. These SIGs covers various technologies required for adopting the expertise in cyber security.
4.5. Introduction to GRE:

A session on GRE exam information was conducted by Mr. Rajvardhan Oak, PASC Vice-Chairman who secured 333 out of 340 in GRE in 2017. He covered topics about GRE as Exam Pattern of GRE, Resources required for preparation, study timeline and some important keynotes, which were so helpful for attendees.

3.6. Domain Introduction:

A one day seminar was conducted on 2\textsuperscript{nd} September 2017 on “Introduction on various domains” for new PASC members so that they can choose one by their interest.

5. Workshops:

5.1. Machine Learning:

A workshop was arranged on Machine Learning conducted by a PASC Alumni of Batch of 2017, Mr. Akash Vartak. The workshop was a session of 3 days and the first day included: Introduction to Python, its libraries: Pandas, Numpy and use of Jupyter Notebook. An active participation and enthusiasm to learn about the topic was seen among the students. The 1st session was conducted on 1st July 2017.

The day 2 of the workshop was conducted on 8th July 2017. It included the use of matplotlib and seaborn for Data Visualization. It also emphasized on Python's Machine Learning library 'scikitlearn'.

The final day of the workshop helped the students to deal with actual ML problems. A complete problem was taken to help them analyze and interpret the given data and get the optimum solution. The workshop finally concluded on 15th July 2017 under the guidance of Akash Vartak.
5.2. Web Development (Angular JS):

A one day workshop was conducted by Akash Raina on Angular-JS on 10th September 2017. It included advanced web development using framework of Java Scripts (JS).

5.3. Ethical Hacking:

A two day workshop was conducted on ethical hacking on 19th and 20th of August 2017 by “Cybercure” expertise. It included introduction to hacking, some basic hacking methods, etc. We received response of nearly 150 candidates for workshop.
5.4. Introduction to Linux (Linuxify):

Linuxify workshop was conducted by PASC members on 12th February, 2017. It included installation of Ubuntu Operating System on laptops. Also, various terminal commands were taught.

6. Webinars:

PASC alumni conduct webinars regularly in order to make our present members familiar with recent technologies, to clear their doubt.

6.1. NodeJS:

A webinar on Nodejs was conducted by PASC Alumni Mr. Sarthak Munshi, Content Engineer at Hackerrank, and Intern at Google Summer of Code on 16th of September 2017. It included some NodeJS modules like HTTP module, URL module, etc.

7. Chapter Regular Meetings:

We regularly conduct chapter meetings for various activities like project discussions, event planning, some technical sessions, etc. We conduct meetings monthly to discuss above mentioned things.

- Projects and Research Papers:

  PICT ACM Student’s Chapter encourages chapter members to write research paper, develop projects & accordingly awards them for their work.

1. Projects:

b. **DDoS Detection** - Detection of network attacks using data mining algorithms (April 2017-July 2017), By Mr. Rajvardhan Oak and team.

c. **BehavioAuth** - A new architecture for authentication using behavioral biometrics. (Feb 2017-April 2017), By Mr. Rajvardhan Oak and team.

d. **Genome Sequencing** - Design of parallel architecture for De Novo Genome Sequencing with Velvet using OpenMP (Nov 2016-Jan 2017), By Mr. Rajvardhan Oak and team.

e. **Parking Spot Reservation System** — Blockchain + Machine Learning, Working on a decentralized parking spot reservation system which uses Hyperledger Fabric to rent physical locations for parking. Uses machine learning algorithms that automates buying-selling process and provides dynamic, real-time price recommendations. (October 2017 - PRESENT), Shlok Gilda and team.

f. **Immigration Border Management System** — Blockchain + Machine Learning, Working on a smart, decentralized system which will help border agencies to collaborate and store the border crossings data in a secure and effective way using Hyperledger Fabric. Uses machine learning algorithms that will calculate the past unusual events and criminals behavior and will predict if citizen is legit or not by the existing data stored in the blockchain. (September 2017 - Present), By Shlok Gilda and team.

g. **User Motion Detection (IEEE Technergize)** — Deep Learning, Working on a user motion detection project. The project aims to recognize human-object interactions and build a timeline of user actions. Technergize is a national level project competition organized by IEEE Computer Society India Council Students Activities Committee. (September 2017 - PRESENT), By Shlok Gilda and team.

h. **Fake News Detection** — Machine Learning, Evaluated multiple machine learning algorithms for detecting fake news on the Internet. Achieved best accuracy of 85.6% by passing TF-IDF of bi-grams fed into a Stochastic Gradient Descent model. Also experimented with combinations of bi-grams with PCFG features. (September 2017 - October 2017), By Shlok Gilda and team.

i. **Evading Machine Learning Malware Classification** — Reinforcement Learning, Automated application that finds blind spots in a static analysis anti-malware Windows PE classifier and makes functionality-retaining transformations in the malware files so that they successfully evade the classifier. (August 2017 - November 2017)
j. **Source Code Classification using Neural Networks** — Deep Learning, Source code classifier that uses a word embedding layer with a Convolutional Neural Network to classify 60 programming languages with an accuracy of 97%. Currently extending this work to classify malicious source codes files. (March 2017 - Present), By Shlok Gilda and team.

k. **Password Cracking using Neural Networks** — Deep Learning, Password generation application built using Keras. It makes use of a RNN-LSTM network which reads from a set of starter passwords and tries to predict new passwords from the linguistic patterns observed. Application cracks 7 times more passwords with 7 times lesser number of words than brute force and dictionary attacks. (February 2017 - PRESENT), By Shlok Gilda and team.

l. **Emotion Recognition** — Deep Learning, Emotion recognition application which leverages technologies like OpenCV, Keras and DLib to recognize facial expressions with an accuracy of 90.23% for 4 emotions. (June 2016 - March 2017), By Shlok Gilda.

m. **Music Mood Classification** — Deep Learning, Music mood classification application which leverages technologies like Keras, LibROSA and MIR to extract audio features of songs and classifies English songs with an accuracy of 97% for 4 emotions. (August 2016 - March 2017), By Shlok Gilda and team.

n. **Teacher-Student Communication** — Android based platform for teachers and students for sharing notes, important notices, etc important academics. Back-end is developed using MySQL-PHP and Front-end using Android. (August 2017 – November 2017), By Chinmay Saraf, Sangat Das and Siddharth Sabadra.

o. **PASCchat** — Android based Chatbot specially designed for PASC members for better communication and also have notification sending facility for chapter council members. (August 2017 – December 2017), By Devashish Khairnar, Urmil Shah and Shubham Chaudhari.

p. **Hand Cricket** — Java Application Java based game for teens who love cricket very much. Based on cricket, teens played cricket during classes using book where last digit of page number acted as runs scored. (March 2017 – October 2017), By Avinash Goen and team.

q. **XamBuddy** — Web Application, Examination portal for engineering students of Pune University. A good help for students to practice before examinations. Good help for MCQs, sample papers for practice. (August 2017 – December 2017), By Avinash Goen and team.
2. Research Papers:


h. Shlok Gilda, “Source Code Classification using Neural Networks” — 14th International Joint Conference on Computer Science and Software Engineering (JCSSE), Nakhon Si Thammarat, Thailand JULY 12, 2017 - JULY 14. The paper has also been selected for poster presentation at IRISS 2018: 12th Inter-Research-Institute Student Seminar in Computer Science, organized by ACM India. DOI: 10.1109/JCSSE.2017.8025917