Chathura Widanage

CONTACT INFORMATION

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RESEARCH INTERESTS

Distributed Systems, Cloud Computing, High Performance Computing

EDUCATION

Msc(Reading), Intelligent Systems Engineering
Indiana University, Bloomington

B. Sc. (Hons.), Computer Science and Engineering
University of Moratuwa, Sri Lanka
- Obtained a First Class Honours with a GPA of 3.9 out of 4.2
- Secured a position in the top 10 of the field.

Oracle Certified Professional, Java SE
Oracle University
- Scored 96 out of 100

PROFESSIONAL EXPERIENCE

Senior Software Engineering, Indiana University   Sep 2018 - Now
Contributing to two core projects Twister2 and IndyCar at Digital Science center under the supervision of Prof. Geofrey Fox and Prof. Judy Fox.
- Twister2 : A big data environment for streaming, data processing, and analytics.
- IndyCar : Real-time anomaly detection from edge to HPC-cloud in collaboration with Indycar and Intel.
- Cylon : Cylon is a fast, scalable distributed memory data parallel library for processing structured data. Cylon implements a set of relational operators to process data.

Associate Technical Lead, Adroitlogic Lanka Pvt Ltd   Feb 2018 - Aug 2018
Software Engineer, Adroitlogic Lanka Pvt Ltd   Apr 2017 - Feb 2018
At Adroitlogic I mainly focused on following R&D projects,
- Sigma : A cloud IDE(Saas) for developing, automated version controlling and deploying of server-less applications.
- KachE : A high performance in memory java cache.
- Adroitlogic Data Mapper : Project manager of GUI based data mapping tool which is capable of manipulating/transforming data from various sources such as CSV, JSON, XML, Relational data bases.

Software Engineer & Consultant, Health Information Systems Program, Presidential Secretariat, Sri Lanka   Apr 2016 - Aug 2018
Developing data analysis web and mobile tools to monitor nutrition related issues of children, which makes decision making process streamlined for medical health professionals to address nutrition problems of the country.

Software Engineering Intern, Adroitlogic Lanka Pvt Ltd   Oct 2015 - Apr 2016
I was a core initial team member of Adroitlogic IPS, which is a PaaS solution which can automatically deploy, manage and monitor hundreds of ESBs on hundreds of machines with few mouse clicks.

TEACHING EXPERIENCE	*Visiting Instructor* - CS3042 Database Management Systems Oct 2016 to Jan 2017 Department of Computer Science and Engineering University of Moratuwa

PUBLICATIONS

High Performance Data Engineering Everywhere - IEEE International Conference on Smart Data Services 2020
Chathura Widanage, Niranda Perera, Vibhatha Abeykoon, Supun Kamburugamuve, Thejaka Amila Kanewala, Hasara Maithree, Pulasthi Wickramasinghe, Ahmet Uyar, Gurhan Gunduz, Geoffrey Fox

Anomaly Detection over Streaming Data: Indy500 Case Study - IEEE International Conference on Cloud Computing 2019
Chathura Widanage, Jiayu Li, Sahil Tyagi, Ravi Teja, Bo Peng, Supun Kamburugamuve, Jon Koskey, Dan Baum, Dayle Smith, Judy Qiu

Data Engineering for HPC with Python - PyHPC20 - The International Conference for High Performance Computing, Networking, Storage and Analysis 2020
Vibhatha Abeykoon, Niranda Perera, Chathura Widanage, Supun Kamburugamuve, Thejaka Amila Kanewala, Hasara Maithree, Pulasthi Wickramasinghe, Ahmet Uyar, Geoffrey Fox

Twister2: TSet High-Performance Iterative Dataflow - 2019 International Conference on High Performance Big Data and Intelligent Systems (HPBD&IS)
Pulasthi Wickramasinghe, Supun Kamburugamuve, Kannan Govindarajan, Vibhatha Abeykoon, Chathura Widanage, Niranda Perera, Ahmet Uyar, Gurhan Gunduz, Selahattin Akkas, Geoffrey Fox

CODING COMPETITIONS

AngelHack Colombo 2016 - Runners-up
Organized by: angelhack.com — Dialog Ideamart
Developed an open source disaster response system.
Github: https://github.com/chathurawidanage/suraksha

Augmented Human Conference 2016, Geneva - Top 10 student designs
Organized by: University of Geneva, Switzerland
Designed & Developed Sense, a wearable device which connects people with similar interests

ACES Coders V5.0 - Runners-up
Organized by: University of Peradeniya, Sri Lanka
Algorithmic Challenge similar to IEEE Extreme programming challenge

Google I/O Extended Hackathon - Winners
Organized by: Google Sri Lanka, Dialog Axiata
Designed & Developed Sense, a wearable device which connects people with similar interests

Fugosticka 2.0 - 2nd Runners-up
Organized by: AIESEC, Sri Lanka
Developed the mobile game Gravitron Quest, which is based on laws of physics

Ideamart Code Ultimum - Winners
Organized by: Ideamart, Dialog Axiata
Developed a location based social network which can be accessed even via a feature phone

IEEE Extreme Programming Challenge
- World rank 153 & Sri Lankan rank 6 in round 9.0
- World rank 224 & Sri Lankan rank 22 in round 8.0

ACHIEVEMENTS & AWARDS

- Migara Ranathunga Trust Award for best Computer Engineering Intern of all technical universities of Sri Lanka.
- Presented at 24th Commonwealth Medical Conference as the technical resource person representing DHIS2, Norway & HISP, Sri Lanka.
- Included in the Deans List of the faculty in 2nd, 3rd, 5th, 7th and 8th semesters.
- Recognition Award, Awards Ceremony, 2015, University of Moratuwa for non-academic achievements as an undergraduate.
- Best all-round Student, Maliyadeva College, 2008, Sri Lanka.
- Best Chess Player, Colors Awarding Ceremony, 2005, Maliyadeva College, Sri lanka.
- All island best chess player, (2005,2006), Chess Federation of Sri Lanka.

PROJECTS

Cylon, a framework for high performance data analytics
Cylon is a fast, scalable distributed memory data parallel library for processing structured data. Cylon implements a set of relational operators to process data. Cylon's high performance core is written in C++ while exposing bindings for other languages such as Java and Python.
Technologies : C++, MPI, UCX, Big Data, Parallel programming, HPC, Java, Python
Link: https://cylondata.org

Twister2, a framework for high performance data analytics
Twister2 is a composable big data environment supporting streaming, data pipelines and analytics. Vision is to build robust, simple to use data analytics solutions that can leverage both clouds and high performance computing infrastructure.
Technologies : MPI, Big Data, Parallel programming, HPC, Java, Python, Spring, Hibernate
Link: https://twister2.org

Sigma, an IDE for server-less development
Saas which delivers a full featured cloud IDE to develop server-less applications and deploy them instantly in cloud vendors such as AWS.
Technologies : AWS Lambda, AWS DynamoDB, React JS, Javascript, HTML, CSS
Link: https://sigma.slappforge.com/

Google Summer of Code 2016
Added the capability of creating and viewing longitudinal charts of tracked entity instances of DHIS2 tracker platform.
Organization: DHIS2
Technologies : Angular JS, HTML, CSS, ForerunnerDB, Java, Spring, Hibernate
Link: https://github.com/chathurawidanage/dhis2-tracker-longitudinal-charts

Nutrition Monitoring System
Application to monitor nutrition status of children at district level. Doctors, medical sisters and midwives are the end users of this application.
Technologies : Android, Java, Spring, Maven, Hibernate, Angular JS, HTML, CSS
Production Instance: http://dhis.pgim.cmb.ac.lk/nss/
Web App Source: https://github.com/chathurawidanage/dnms
Mobile App Source : https://bitbucket.org/widanage/dnms-mobile

Suraksha, open source disaster response platform
Platform is capable of managing disaster response centers, communicate their needs with public. People can use this platform to donate and help disaster response centers, lookup people in the disaster response centers by using facial recognition technologies.
Technologies : Java, MySQL, Spring, Hibernate, Angular JS, Computer Vision

Seeds, the location based social network
This social network can be accessed by feature phones via SMS or USSD. User can plant a seed (tweet) at a location and anyone who is within 5km can read those seeds. Users can water (like) seeds planted by others. Seeds wont survive if not watered adequately. Technologies : Dialog Ideamart APIs, PHP, MySQL, Linux

Sense The smart band which connects you
Sense is a WiFi enabled wearable hand band which is always connected to the users facebook account. Matches people based on their likes, interests and recent activities.
Technologies : PHP, Android, Lua, Facebook API, ESP8266, NodeMCU, MySQL

Gravitron Quest a game which challenges the gravity
An android game where player have to use the concepts of gravity to move a spaceship without hitting the obstacles. Technologies : Android, libGdx Engine, Java

Spandha, a wearable health device
A wearable health device which can be used to keep track of the health of elderly people. Device is capable of monitoring heartbeat and body temperature continuously. Detects if person falls and sends a SMS alert to a pre-saved mobile phone.
Technologies : Arduino, Java, MySQL, Ideamart APIs

DECLARATION I hereby certify that the above information about me, are true and correct according to the best of my knowledge.

Date: 10/06/2020   Chathura Widanage