

Special Projects



Project Name	Project Short description	Organization/Client	Location	Advisor	Students
Ignis App	Development of a learning platform for children who are first generation learners coming from low income communities. This project is built for Ignis which aims to improve quality education for the poor through capacity building and skill enhancement programmes. Since its inception in 2014, Ignis has impacted over 10,000 teachers and 250,000 under-served children across India through a wide range of customised learning programs.	Ignis Careers Private Limited	India	Silvia Figueira, PhD : Computer Science & Engineering & Allan Baez Morales, Frugal Innovation Hub	Piyush Kulkarni, Gautham Chitnis, Harshitha Raghavendra Bhat, Natalie Linnell, Shubham Kamdi, Satya Akshara Nittala, Xin Guan
ASDENIC App	A multi-platform mobile application that town officials can use to distribute water quality and weather data to their community members. This will eliminate the need for weekly meetings. It will also provide information to the people in real-time.	ASDENIC	Nicaragua	Silvia Figueira, PhD : Computer Science & Engineering & Allan Baez Morales, Frugal Innovation Hub	Giulliano Silva Zanotti Siviero, Abhilash Harish Srivathsa
Refugee Services of Costa Rica	A website based application that provides refugee services in Costa Rica. Some of the features of the website include providing information about migratory rules and regularizations, naturalization exams (includes a practice exam), rights (right to health, work, etc) and the ability to talk to customer support.	Refugee Services Of Costa Rica	Costa Rica	Silvia Figueira, PhD : Computer Science & Engineering & Allan Baez Morales, Frugal Innovation Hub	Jiahong Li, Aanchal Rai
Galapa Go!	The Galápagos Islands is a tourism hub in Ecuador that greatly benefit economically from the tourism industry. GalápaGo! is a mobile based application that will assist tourists with navigating the island by providing information on hotels, restaurants, tourist attractions, and cultural customs.	Chamber Of Tourism	Ecuador	Silvia Figueira, PhD : Computer Science & Engineering & Allan Baez Morales, Frugal Innovation Hub	Junhan Deng, Abhilash Harish Srivathsa, Jillian Coveney
Ufeel	Mobile Application to provide mental health resources for Santa Clara University students. The application, UFEEL, breaks the social stigma around mental health and will combine Cowell Center resources and research from other mental health professionals to provide better mental health aid.	Santa Clara University	USA [Santa Clara]	Silvia Figueira, PhD : Computer Science & Engineering & Michele Parker, PhD: Biology & Public Health	Benita Rego, Nolita Rego
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EPIC Projects

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Agricultural IoT Dashboard (for DOxy, HA, HiveSpy, etc.)	A dashboard for operating and maintaining IoT devices deployed out in the field.	EPIC LLC		<i>Faculty Advisor:</i> Navid Shaghaghi <i>Other Advisors:</i> Jesse Mayer	Present Students: Tushar Shrivastav, Nikita Smelkov, Naveen Govindaraju, Sohm Dubey Past Students: Jesse Mayer (B.S. 2019 - M.S. 2021), Swetha Rajaraman (M.S. 2021), Zhujun (Flora) Lan (M.S. 2021), Zhujun (Tiffany) Tian, Arjun Kohli, Pratham Darooka, Andrew Kaldani
Aromyx	Research into the quantification and visualization of olfactory data	Aromyx		<i>Faculty Advisor:</i> Navid Shaghaghi	Present Students: Megan Wu, Mahalakshmi Nagulapati, Susmith Barigidad, Surya Kumar, Gaurish Anvekar, Ana Amurrio, Abir Chakraborty Past Students: Anika Shahi (B.A. 2019), Gautham Jonnalagedda (M.S. 2020), Natalie Van Maerssen (B.A. 2020), Gnanitha Meka (M.S. 2020), Kunal Mehta (M.S. 2020), Gaurav Gandhi (2021), Shubhi Agarwal (M.S. 2020), Tanmay Wagh (M.S. 2021), Samuel Vivian (B.S. 2021), Nien-Thing Chiang (M.S. 2021), Donovan Allen (B.S. 2021), Rishabh Shyamsunder (B.A. 2021), Andres Calle, Renuka Mule (M.S. 2020), Mit Gandahi (M.S. 2021), Shaylynn Reger, Jiaxin Liu, Akarsh Mallampati, Vishnu Singeetam (M.S. 2021)
BOxy	A cost effective blood oxygen and heartrate monitor using off the shelf components and custom software	GluMo Inc.		<i>Faculty Advisor:</i> Navid Shaghaghi, Jonathan Zhang	Past Students: Beau Hsia (B.S. 2021), Derrick Wang (B.S. 2021)
ClassRoute	An automated video translation NLP pipeline from English to other languages (such as Punjabi, Urdu, Mandrine, Telugu, etc.), which goes beyond literal translation and incorporates the cultural needs of the learners to reinforce learning in a multilingual education system.	ClassRoute LLC		<i>Faculty Advisor:</i> Navid Shaghaghi Smita Ghosh Maria Joseph Israel <i>Other Advisors:</i> Abhishek Biswas	
Cuckoo Prefix	A new data structure for the purpose of blocking IPs leveraging IP subnets that achieves similar throughput rates as cuckoo++ with 8 times less memory usage.			<i>Faculty Advisor:</i> Navid Shaghaghi	Past Students: Donovan Allen (B.S. 2021)

DeLorean Energy	A software for estimating number of EVs needed in a community for the EVs to be able to play a role in 1) Peak Energy Demand Curve Shaving and 2) Energy Curve Smoothing			<i>Faculty Advisor:</i> Navid Shaghaghi	Present Students: Chris Pitterle, Pranav Rao, Jordan Randleman Past Students: Arjun Chimni
DivOp	Divisibility Operator for Large Integers Using Divisibility Rules which can save CPU time and energy consumption			<i>Faculty Advisor:</i> Navid Shaghaghi	Past Students: Jake Mathai (B.A. 2019)
DoBid	A crowdfunding platform for the democratization of political bargaining and fundraising	DoBid LLC		<i>Faculty Advisor:</i> Navid Shaghaghi	Present Students: Jianqiao Ge, Frederick Tan, Kasey Woo, Melisa Chen (Cornell), Davig Yang (UC Berkeley), Victor Shi (UC Berkeley), Nikolaus Rost Past Students: Joe Bredar (B.S. 2020), Prathibha Venkataramanap (M.S. 2020), Priyansh Bendre (M.S. 2020), Nilay Patel (M.S. 2020), Mit Gandahi, Ninad Sant (M.S. 2020), Celine Tsai, Monil Shrenik Jain (M.S. 2020), Yash Karkhanis (M.S. 2020), Amy Cui (B.S. 2020), Eli Ivashkin, William Wahjudi, Krutarth Dave (M.S. 2020), Gaurav Karki (M.S. 2020), Mayank Verma (M.S. 2020), Justin Lee, Samreen Kazimi (M.S. 2021), Tianyi Liu, Tim Hradil, Ty Yamashita, Yunyan Shi, Anjali Gupta
Drive Health	An IoT system for identifying potholes and other road hazards			<i>Faculty Advisor:</i> Navid Shaghaghi, Behnam Dezfouli	Past Students: Peter Ferguson (B.S. 2020), Brian Walker (B.S. 2020)
DOxy	Low cost Dissolved Oxygen monitoring system for aquatic life applications	EPIC LLC		<i>Faculty Advisor:</i> Navid Shaghaghi <i>Other Advisors:</i> Jesse Mayer Peter Ferguson	Present Students: Adam Graham, Frankie Fazlollahi, Tanmay Khandelwal, Tushar Shrivastav Past Students: Jayati Patel (B.A. 2020), Tiana Nguyen (BA 2021), Arianne Soriano (B.S. 2021)
Ethics of Facial Recognition AI	A study of the ethical concerns and dangers of facial recognition AI systems.			<i>Faculty Advisor:</i> Navid Shaghaghi	Present Students: Ananya Pagadala, Johnathan Elliott, Edith Gonzalez, Jay Alag

eVision	A machine learning approach for forecasting seasonal influenza outbreaks	Cepheid Inc.		<p><i>Faculty Advisor:</i> Navid Shaghaghi</p> <p><i>Other Advisors:</i> Ben Dority</p>	<p>Present Students: Andres Calle, George Kouretas, Jaidev Mirchandani, Nancy Ma, Michael Castillo, Divya Syal, Om Ambalkar, Andrew Cui</p> <p>Past Students: Meghan McGinnis (B.A. 2019 - M.S. 2020), Yuhang Qian (B.A. 2019), Anika Shahi (B.A. 2020), Liying Liang (B.S. 2021), Tanmay Wagh (M.S. 2021), Ron Huang, Yash Kamdar (M.S. 2021), Yoga Ramachandran, Bhupinder Jagwani, Namratha Kamath, Supriya Karishetti (M.S. 2021)</p>
FloMoSys	A cost effective and low power IoT Flood Monitoring System			<p><i>Faculty Advisor:</i> Behnam Dezfouli, Navid Shaghaghi</p>	<p>Past Students: Meghan McGinnis (B.A. 2019 - M.S. 2020), Zach Cameron (B.S. 2020), Peter Ferguson (B.S. 2020 - M.S. 2021)</p>
GluMo	A Small Factor Noninvasive Blood Glucose Monitoring Medical Instrumentation	GluMo Inc.		<p><i>Faculty Advisor:</i> Navid Shaghaghi, Jonathan Zhang</p> <p><i>Other Advisors:</i> Peter Ferguson</p>	<p>Present Students: Hanna Albright</p> <p>Past Students: Ricky Pang, Horatio Xiao, Jayati Patel (B.A. 2020), Tiana Nguyen, Bhawandeep Harsh, Ben Tan (B.S. 2021), Teddy Nguyen (B.S. 2021), Peter Ferguson (B.S. 2020 - M.S. 2021)</p>
GoodBuys	Mobile and Web application for making ethical decisions when making purchases			<p><i>Faculty Advisor:</i> Navid Shaghaghi</p>	<p>Present Students: Nivedita Thapa, Prerak Mathur, Suvass Ravala, Byron Josh Cuachin, Juan Arias Martinez, Gowtham Rajeshshekaran</p> <p>Past Students: Hayden Lewis, Olivia Hess (B.A. 2020), Reece Carolan, Aditya Ranade, Leslie Valenzuela, Sanjana Ramankandath (M.S. 2021), Shruti Bhat (M.S. 2021), Manjiri Parab (M.S. 2021), Manpreet Sokhi, Nikita Kalje, Georgia Barrett, Manas Sadhwani (M.S. 2021), Swathi Haridas Vageesh (M.S. 2021), Matthew White, Adi Relan, Bagirathan Sankar (M.S. 2021)</p>
GrapeSense	A Grape Aging Classifier Using Residual Transfer Learning on Drone Images			<p><i>Faculty Advisor:</i> Navid Shaghaghi</p>	<p>Present Students: Maanit Sharma (UCB)</p>
HA (Hydration Automation)	An energy efficient system for automation of water systems including water tanks, pumps, etc.	EPIC LLC		<p><i>Faculty Advisor:</i> Navid Shaghaghi</p> <p><i>Other Advisors:</i> Peter Ferguson Jesse Mayer</p>	<p>Present Students: Adam Graham, Frankie Flazlollahi, Tanmay Khandelwal, Tushar Shrivastav</p> <p>Past Students: Zach Cameron (B.S. 2020), Nicholas Kniveton (B.A. 2019), Will Tuttle, Peter Ferguson (B.S. 2020 - M.S. 2021), Jesse Mayer (B.S. 2019 - M.S. 2021), Quiguo Li (M.S. 2021)</p> <p>Business Team: Gurkiran Kaur (M.S. 2020)</p>

HiveSpy	Automation of beekeeping with a specific focus on labor shortage and the prevention of hive swarming	EPIC LLC		<i>Faculty Advisor:</i> Navid Shaghaghi <i>Other Advisors:</i> Peter Ferguson Jesse Mayer	Present Students: Sami Lama, Tanmay Khandelwal, Jack Ursillo, Eva Stenberg Past Students: Yuya Yabe (B.A. 2020), Amanda Taylor(B.S. 2021), Liyng Liang (B.S. 2021), Justin Ling (B.S. 2021), Peter Ferguson (B.S. 2020 - M.S. 2021) , Jesse Mayer (B.S. 2019 - M.S. 2021), Tatiane Antonio (M.S. 2021)
IncidentAid	First Responder (Firefighters, EMTs, etc.) mobile app and future specialized handheld device(s) for saving lives	IncidentAid P.B.C.		<i>Faculty Advisor:</i> Navid Shaghaghi <i>Other Advisors:</i> Mo Alborati	Present Students: Ananth Pilaka (UCSB), Atharva Kukade, Akash Kumar (Highschool) Past Students: Vigneshwaran Venugopal (M.S. 2019), Semal Patel (M.S. 2020), Shubham Patel (M.S. 2019), Brinda Pabari(M.S. 2020), Maya Francis (B.A. 2021), Yash Patki, Venkata Peddisetty (M.S. 2021), Prem Motgi (M.S. 2021), Praveen Vandeyar, Mitali Mahajan (M.S. 2021), Daniel Ziems (B.S. 2021), Jeffrey Lin (M.S. 2022), Mingun Cho (UCSC BS 2021), Quiguo Li (M.S. 2021)
InspiredEarth	Creating an online store for a local business which donates part of its proceeds to environmental causes.	InspiredEarth		<i>Faculty Advisor:</i> Navid Shaghaghi	Present Students: Justin Kim, David Truong, Charan Yeddula , Chris Tamayo, Swapna Panuganty Past Students: Jessica Ibarra
KeyLight	Leveraging Alexa voice control, Unity Engine visualization, and virtual reality (VR) technologies to train designers to create lighting looks using standard industry terminology and commands.			<i>Faculty Advisors:</i> Navid Shaghaghi, Brian Beams	Past Students: Madeline Golliver (B.S. 2020)
Locals	New social media platform centered around travel experiences and recommendations from locals.			<i>Faculty Advisor:</i> Navid Shaghaghi	Past Students: Malika Singh (B.S. 2021), Chantel Allegakoen (B.S. 2021), Sarah Ahmed, Joce Pulido
MeTIS / ToDI	Exploration of the ethics of metadata ownership such as data indecies			<i>Faculty Advisors:</i> Navid Shaghaghi, Ahmed Amer	Present Students: Maria Joseph Israel
Panterix	A mobile navigation application that takes the safety of the roads into account when suggesting routes			<i>Faculty Advisor:</i> Navid Shaghaghi	Present Students: Stephen Mistele, Nick Tallis, Aidan MacKey, Kevin Rooney

Paper Prisons	Empirical research to draw attention to the tens of millions of Americans burdened by contact with the criminal justice system despite being eligible for relief from this contact.	SCU Law School		<p><i>Faculty Advisors:</i> Navid Shaghaghi, Colleen Chien</p> <p><i>Other Advisors:</i> Hithesh Bathala</p>	<p><i>Present Students:</i> Gap Sizing / Audit: Chhavi Garg, Nivedita Thapa, Moumi Kumar, Aniketh Satyanarayana</p> <p><i>Tools / Web:</i> Jay Kanakiya, Amy Allshouse, Ju Young Park, Max Calcoen, Martin Rios-Cardenas, Ekam Singh</p> <p><i>OPT Support:</i> Udishia Madnani</p> <p><i>Law / Data:</i> Khushboo Gupta</p> <p><i>Past Students:</i> Kushall Dayal (M.S. 2020), Darshan Bhansali (M.S. 2020), Apoorva Srinivasa (M.S. 2020), Bhagyashri Badgular (M.S. 2020), Shriya Rao (M.S. 2020), Tedy Nguyen, Surya Konda (M.S. 2020), Pooja Prashar (M.S. 2020), Parth Shah (M.S. 2020), Chandni Purohit (M.S. 2020), Lasya Pathuri (M.S. 2020), Vidyashree Venkatesh (M.S. 2020), Laxmi Samala (M.S. 2020), Kalyani Rane (M.S. 2020), Harsh Tandon (M.S. 2020), Zuyan Huang (M.S. 2021), Prajakta Pingale (M.S. 2021), Krishan Ranjan (M.S. 2020), Connor Azarello (B.S. 2021), Alexandra George (B.A. 2021), Hithesh Bathala (M.S. 2021), Jaskaran Kohli (M.S. 2020), Tanmayi Varanasi (M.S. 2020), Anthony Chen, Ekham Brar, Nate Metz, Emma Schechter, Justin Li, Achal Joshi, Celeste Munoz, Chelsie Martinez, Heta Joshi, Kritin Dhoka, Vidhi Gandhi (M.S. 2020), Srihari Shekhar, Apoorva Revankar (M.S. 2021), Sameeksha Raj (M.S. 2021), Monica Jain (M. S. 2021), Jessica Liu (B.S. 2021)</p>
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PTHub (Public Transportation Hub)	Mobile and web application for assisting SCU students with public transportation	SCU Associated Student Government (ASG)		<i>Faculty Advisor:</i> Navid Shaghaghi	Present Students: Backend: Hanna Albright, Sanjana Parekh, Addison Schwarz, Prateek Konduru, Arnav Choudhury Mobile: Camden Rothleder, Prajwal Bellignur, Padmakshi Kumar, Web: Rian Jasmine Quiban, Aaron Ancheta, Past Students: Yu Yang Che (B.A. 2021), Amanda Taylor (B.A. 2021), Helen Kassa (B.A. 2020), Madeline Golliver (B.A. 2020), Shivang Gupta (M.S. 2020), Ajay Deshmukh (M.S. 2020), Sara Lopez (B.S. 2021), Aayushi Mehta (M.S. 2020), Akshar Solanki, Dannier Li, Megan Sng, Puneet Khanuja (M.S. 2020), Anjaly George (M.S. 2021), Dhruvinkumar Ghadiya (M.S. 2021), Khushboo Zope, Divya Arora, Andrew Schulz, Ruchira Teli, Adi Relan, James Ossam, Christopher Sarkissian
RPB (Research Paper Blockchain)	A consortium level block chain for tackling plagiarism and double submission of research papers to conferences and journals			<i>Faculty Advisor:</i> Navid Shaghaghi	Present Students: Quinton Past Students: Suraj Bagaria, Harrison Chen, Nicholas Kniveton (B.A. 2020)
SmartPsych	Platform for matching patients with mental health professionals			<i>Faculty Advisors:</i> Navid Shaghaghi, Kieran Sullivan	Present Students: Ron Huang, Andres Calle, Boston Batista, Amanda Nolen

Swing Beats	A VR/AR Music visualization and tactile feedback system for teaching/learning how to dance to music.			<p><i>Faculty Advisor:</i> Navid Shaghaghi</p> <p><i>Other Advisors:</i> Jesse Mayer Alissa LaFerriere Peter Ferguson</p>	<p><i>Present Students:</i> IoT Team: Megan Wisner, Adam Graham, Tanmay Khadelwal, Kristin Hoekema</p> <p><i>Web Team:</i> Front end: Vedya Konda Back end: Tanmay Khadelwal, Kristin Hoekema, Priyanshi Shah</p> <p><i>Business Team:</i> Esteban Mayora, Megan Wisner</p> <p><i>Mobile Team:</i> Asad Baloch, Aman Mishra, Gavin Ryder, Nishank Soni</p> <p><i>Past Students:</i> David Kerr (B.A. 2019), Mohammed Khadadeh (B.S. 2020), Samuel Vivian (B.S. 2021), Brinda Pabari (M.S. 2020), Jaykumar Sheth, Madeline Golliver (B.S. 2020), Dipti Gupta (B.S. 2020), Edmond Howser, Yu Yang Chee (B.S. 2021), Alissa LaFerriere (B.A. 2021), Jesse Mayer (B.S. 2019 - M.S. 2021), Peter Ferguson (B.S. 2020 - M.S. 2021), Chang You, Alisha Siddiqui (M.S. 2021), Danny Grant, Rinku Gulecha (M.S. 2021), Harini Sundar (M.S. 2021)</p>
TailorEd	A custom Image recognition applied to classroom environments coupled with student demographic and grade data in a study of the effects of pedagogical practices and classroom technologies on learning			<p><i>Faculty Advisors:</i> Navid Shaghaghi, Julia Voss</p> <p><i>Other Advisors:</i> Joseph Israel</p>	<p><i>Present Students:</i> Andres Calle, Kristin Lee, Ashika Rajesh, Carson Hom, Quan Nguyen, Vivek Ponnala, Juhi Checker, Shiv Jhalani, Luis Herrera, Iris Tilton, Axel Perales, Maharsh Suryawala, Muthukumaran Elango</p> <p><i>Past Students:</i> Stefan D'Costa (M.S. 2018), Meghan McGinnis (B.A. 2019 - M.S. 2020), Oras Phongpanangam (B.A. 2019), Mohammed Khadadeh (B.S. 2021), Liying Liang (B.S. 2021), Amanda Taylor, Mika Philip (B.A. 2020), Jaquiline Reardon (B.A. 2020), Maximilian Khan, Roland Afaga, Liam Abbate (B.A. 2021), Jay Laddhad (B.S. 2021), Lauryynn Diby (B.S. 2021), Jiahong Li</p>
Twitter Isn't Real Life	Research into the various facets of the Twitter social network for modeling rally around the flag effects and the modeling of fake news propagation and prevention			<p><i>Faculty Advisors:</i> Navid Shaghaghi, Smita Ghosh</p>	<p><i>Present Students:</i> Andres Calle, Juan Zuluaga, Mubashir Hussain, Isabel Zuluaga</p> <p><i>Past Students:</i> Yash Kamdar (M.S. 2021)</p>
Xpert Sign Up	A web applications designed to improve process efficiency in addressing R&D's need to sign up for laboratory instruments and lab space.	Cepheid Inc.		<p><i>Faculty Advisors:</i> Navid Shaghaghi Eva Bouzos Iain Hartley</p>	<p><i>Present Students:</i> Josephine Lo, Rohil Srivastava, Grace Tantra, Ashutosh Somaiya</p> <p><i>Past Students:</i> Alex Fang, Sebastian Vitug (B.S. 2021), Ramya Umamaheswaran (M.S. 2021)</p>

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