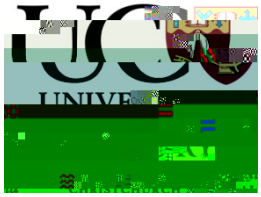

Department of

Computer Science and Software Engineering

2021 Postgraduate Conference

September 7 & 8

Trimble

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tait communications

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Tuesday 7 September

Welcome

spinal fusion in sheep with the hypothesis that strain measured by the sensor would decrease as the fusion progressed. Using data acquired from the sensor, a machine learning protocol was developed to recognize simulated sheep movement activity. Building upon this, additional data acquired from a Finite Element Analysis model and a simulated healing setup are being developed for a time series extrinsic regression model to analyse changes in subsequent occurrences of the activity.

Henry Hickman
Title: Measuring the Effectiveness of the Cybersecurity Chapter in the Computer Science Field Guide
Abstract: With the expansion of Achievement Standard 91898 for NCEA in NZ High Schools, allowing students to be examined on cybersecurity, a new chapter in the Computer Science Field Guide (CSFG) has been developed to support teachers and students.
As part of this development, I have been involved in designing and evaluating interactives for this chapter. These are activities and games that aim to reinforce the content provided by the chapter.
I aim to evaluate how effective these interactives are, and the chapter as a whole, as a teaching tool. This will involve interviewing teachers across New Zealand to compile their thoughts and feelings on the chapter, allowing us to get an understanding of how effective it is from the ones who will be using it in the classroom.

Masters

Chris Carr
Title: Species Classification of Thermal Video Using a Convolutional Recurrent Neural Network
Abstract: This paper proposes a new approach to species surveying, utilising convolutional recurrent neural networks (CRNNs). By using breakthroughs in neural network archi- tectures and designs, as well as modern hardware, new approaches are possible that have not yet been investigated. Analysing thousands of hours of footage allows for more accurate, timely, and interesting surveying footage, far

as an extension of POR to include proof of correct replicas storage. It also combines Verifiable Delay Functions (VDF) to prevent a server to generate the replicas on the fly when requested to prove correct storage. VDF allows the client or anyone to verify the server's proof, rather than only the client. Our work is to implement PORR in a real cloud environment, test its performance under a variety of popular network file protocols, and finally compare it with previous similar works for a comprehensive evaluation.

Zhouyu Qu

Title: A wireless coordination algorithm for overtaking on a drone road

Abstract: Unmanned aerial vehicles (UAVs) or drones have strong potential ability to perform complicated tasks, such as goods and parcels delivering, in a conceivable future. A good way to manage those drones is constructing a "drone road", which is a virtual, tube-like area in airspace; drones will prefer to fly in the tube, but can also be out of it when necessary. The scenario we focus on is a straight and finite long tube segment, and all drones fly toward the same direction but with different d

findings suggest that a combined approach of very-high resolution satellite images coupled with object detection and field camera images would provide the best approach for long-term Weddell seal monitoring for Ross Sea Region Marine Protected Area objectives.

PhD

Camila Costa Silva
Title: Reusing software engineering knowledge from developer communication
Abstract:
Software development is a knowledge-intensive activity since it requires different types of knowledge, for example, knowledge about software developm

technologies for e-health systems has increased recently, existing systems contain limited studies on applying cryptographic primitives in order to preserve data privacy.

Faiza Tahir

Title: Motivational Strategies of Increasing Learning from ITS

Abstract: Motivation and affect detection are prominent yet challenging areas of research in the field of Intelligent Tutoring Systems (ITS). Devising strategies to engage learners and motivate them to practice regularly are of great interest to researchers. In the learning and education domain, where students use

3. Understand means by which systems can/should adapt to user pace.
4. Validate that the adaptations are successful.
5. Investigate system nuances that make the adaptations especially successful. For example, the timing and frequency of adaptation.

Ben McEwen

Title: Predator Tracking and State Estimation

Abstract: Thermal cameras are used to monitor invasive pest populations and inform elimination efforts. These cameras are limited by their resolution, meaning that feature-based classification is often not sufficient. Predictive state estimation of invasive predators is useful for visual classification and the analysis of movement patterns in occluded and noisy environments. These movement patterns aid in the classification of species. Multiple State estimation techniques were tested on a thermal recording dataset. The state estimation techniques were compared using the thermal dataset and it was found that they were able to improve tracking performance in noisy and occluded environments with the Unscented Kalman Filter achieving the best results. It was found that these methods all suffer from similar limitations due to the animal changing state while occluded. A novel state estimation method is proposed that merges traditional state estimations with learnt scene masks to improve tracking results.

Timothy McKenzie

Title: Addressing Video Game Development Challenges Using Industry 'Best Practices'

Abstract: Video games have rapidly become a massive and powerful creative industry that has far surpassed other entertainment industries such as movies and music. However, the video game development (VGD) industry is not without significant development challenges in multidisciplinary team dynamics and communication, work culture, and project management. These issues often stem from video games being a complex and confusing 'marriage' of software engineering and creative production.

There is a lack of agreement in academia and even within the industry itself on 'good' or 'best' VGD practices or processes which unify these competing creative and technical aspects. So, each game studio has its own highly contextualized ad-hoc (and often closely guarded) way of working, which is often misunderstood to be 'agile'. Consequently, the absence of commonly accepted 'good' development practices and the misapplication of agile means both independent studios (especially start-ups) and

Ja’afaru Musa

Title: Improving Face-to-

Abstract: Although communication skills are widely recognized as crucial for effective software development teams, many graduates lack such skills, which are difficult to teach. We adopt the active video watching (AVW) approach to teach face-to-face communication skills to second

Tim Rensen

Abstract: Scallop fishery SCA7 at the top of the South Island was closed due to stock collapse in 2017,

Matthew Edwards
Title:
Abstract: Detecting “corners”, or interest points, in images is central to many traditional computer vision applications. The sub-pixel corner refinement algorithm in OpenCV is widely used to refine corner location estimates to sub-pixel precision. For example, many researchers use it every time they perform camera intrinsic calibration. However, it produces estimates with significant bias and noise which depend on the sub-pixel location of each corner. Following on from my previous research in which I showed this e

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More than 2300 staff works for the Council across 60 locations around the city and Banks Peninsula. These include professional and administrative positions in core infrastructural areas such as water, waste, roading and parks; as well as jobs within the Council's broader activities including its library network, art gallery and recreation facilities.
The Christchurch City Council is an organisation committed to achieving sustainable outcomes for the community, environment and people of Christchurch and Banks Peninsula. By working for the Christchurch City Council you will have an opportunity to work on a wide range of projects providing you with opp.6 (v)-8.6 (i)-3.2 (d)-0.8 g7.9 (36.6r.8 7 (p)13

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Seequent is a global leader in the development of visual data science software and collaborative technologies. Our solutions enable people to create rich stories and uncover valuable insights from geotechnical data, and ultimately make better decisions about their earth, environment and energy challenges.
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Seequent used to be ARANZ Geo. Formed in 2004, the company built its flagship 3D geological modelling product 'Leapfrog' based on a pioneering algorithm that enables fast and automated formation of 'surfaces' directly from geological data. Today Leapfrog has thousands of users and is relied on by top mining and exploration firms, major geothermal energy companies, civil construction leaders and environmental science specialists.
Since 2004, we've integrated three unique companies at the top of their game:

QG were brought on to contribute to the geology and geostatistics expertise within Seequent. Their deep experience and market insights solidify our position in the mining industry.
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