UNIVERSITY GRADUATE SCHOOL

IMAGES OF STUDY 2020

UNIVERSITY OF BIRMINGHAM

Images of Study 2020

Can you tell the story of your dissertation in a single image?

The University Graduate School presented this challenge to our postgraduate taught students and this booklet includes contributions from thirteen postgraduate taught students across a variety of departments.

The images and abstracts in this booklet highlight the cutting-edge research conducted by our postgraduates at the University of Birmingham as part of their final
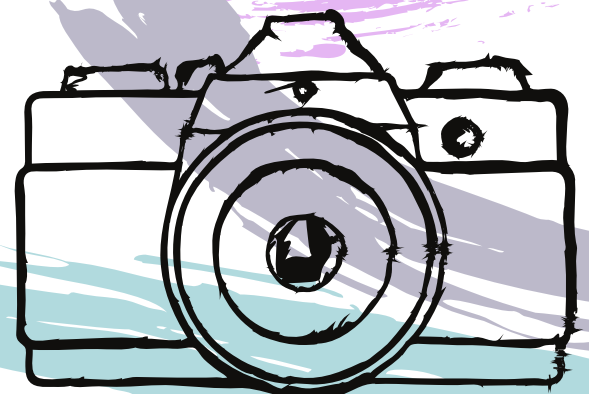dissertations, and we hope you will enjoy learning more about these exciting projects.

Please note that the images and projects described in these pages contain some sensitive issues.

Special thanks to our postgraduate taught students for taking part in Images of Study 2020.

Julian Pratt   Jasmin Kauldhar   April-Lina Waine
Chutiphon Moranon   Odirichi Andrew
Shahad Asiri   Charlotte Reid
Tabitha Lewis   Vincent Mach
Zimin Xu   Farha Kamalia
Jeff David   Madelyn Essex

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The right way to reduce greenhouse gases?

WASTE GAS

FURNACES and TURBINES

COOLING TOWERS

WOOD PELLETS

COAL

Burning trees rather than coal - is this really how we ought to address climate change?

Julian Pratt, College of Arts and Law

This traditional turbine power station is being converted from coal to wood pellets, with experimental technology being added to capture the emitted carbon dioxide and store it deep underground. The idea is to transition away from fossil fuels and reduce greenhouse gas levels. But just because we can do this, ought we to? For example, huge amounts of land and water are needed to grow the plant materials, increasing pressure on already scarce resources, making them less affordable for the world's poorest. I explore the ethical pros and cons of this often praised and often criticised technology called Bioenergy with Carbon Capture and Storage (BECCS).
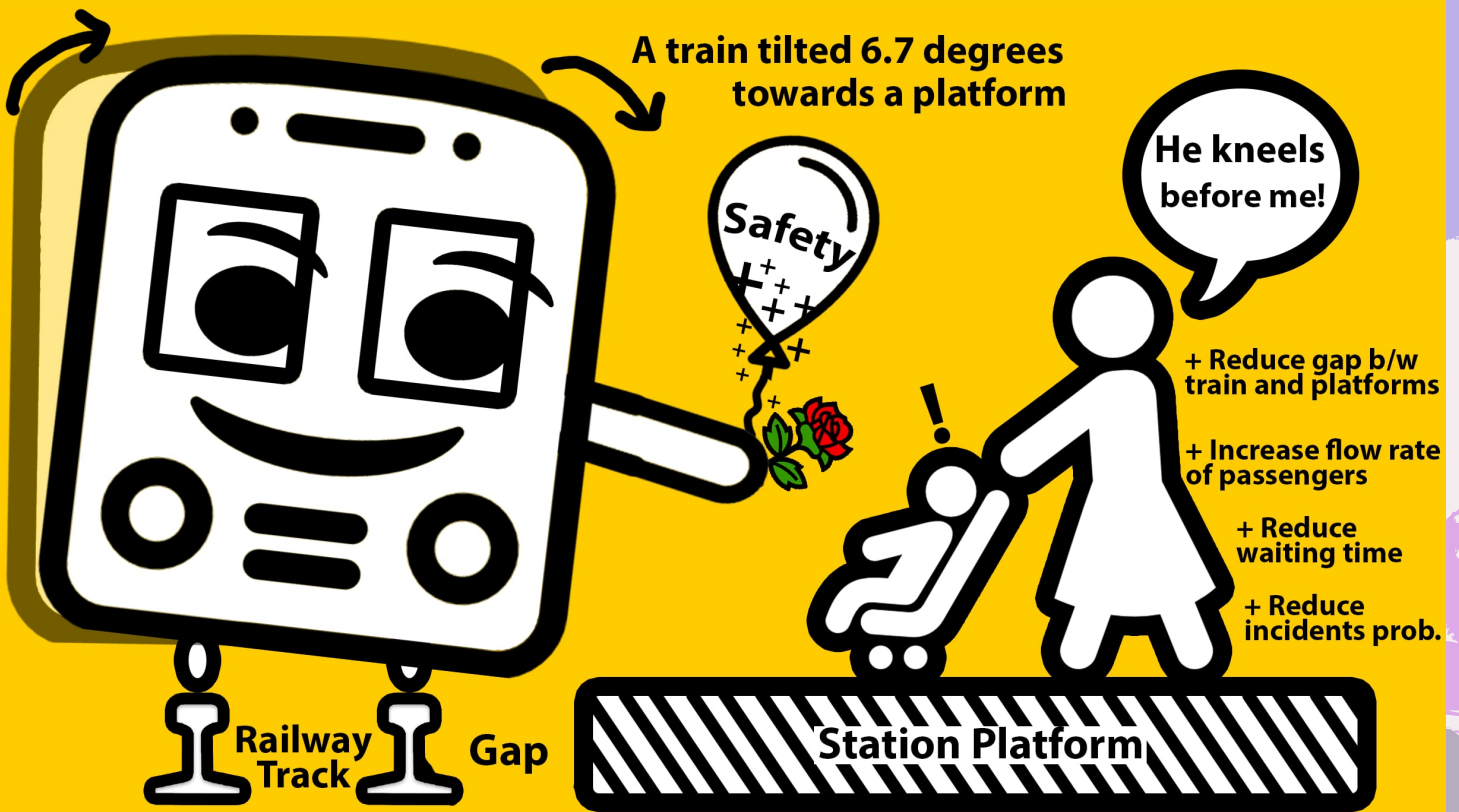
Kneel for All

Chutiphon Moranon, College of Engineering and Physical Sciences

A rapid escalation in the number of passengers using rail transport is inevitable nowadays. Undoubtedly, more passengers lead to higher incident risks while boarding/alighting the trains and more train dwell time required at platforms. A passenger train equipped with a "kneeling system", the same as used by busses, is a feasible option to mitigate the problems as such. This dissertation project investigates the cost and benefits of implementing a "kneeling train". When implementing the kneeling train, despite slightly-reduced a ride comfort level, the passenger flow rate is increased and the waiting time is reduced. The benefits outweigh the cost of implementing it.

Is Saudi Arabia's Legal Regime Conducive to Attract FDI in Non-oil Sectors? Challenges and Implications: A comparative study KSA and UAE

Shahad Asiri, College of Arts and Law

The image illustrates how Saudi Arabia has encouraged foreign companies to invest in the nation by referring to its Economic Vision 2030.Saudi Arabia is an oil-rich country that, however, must be adapting and responding to the challenges of global competition to invest in non-oil sectors. My research aims to examine the legal barriers that harm the inflows of Foreign direct investment in Saudi Arabia. Therefore, the comparison to the UAE is significantly crucial to address Saudi Arabia's legal regime and find solutions to attract FDI. This research image tries to explain the overall research question: Is Saudi Arabia's Legal Environment Conducive to Attract FDI?
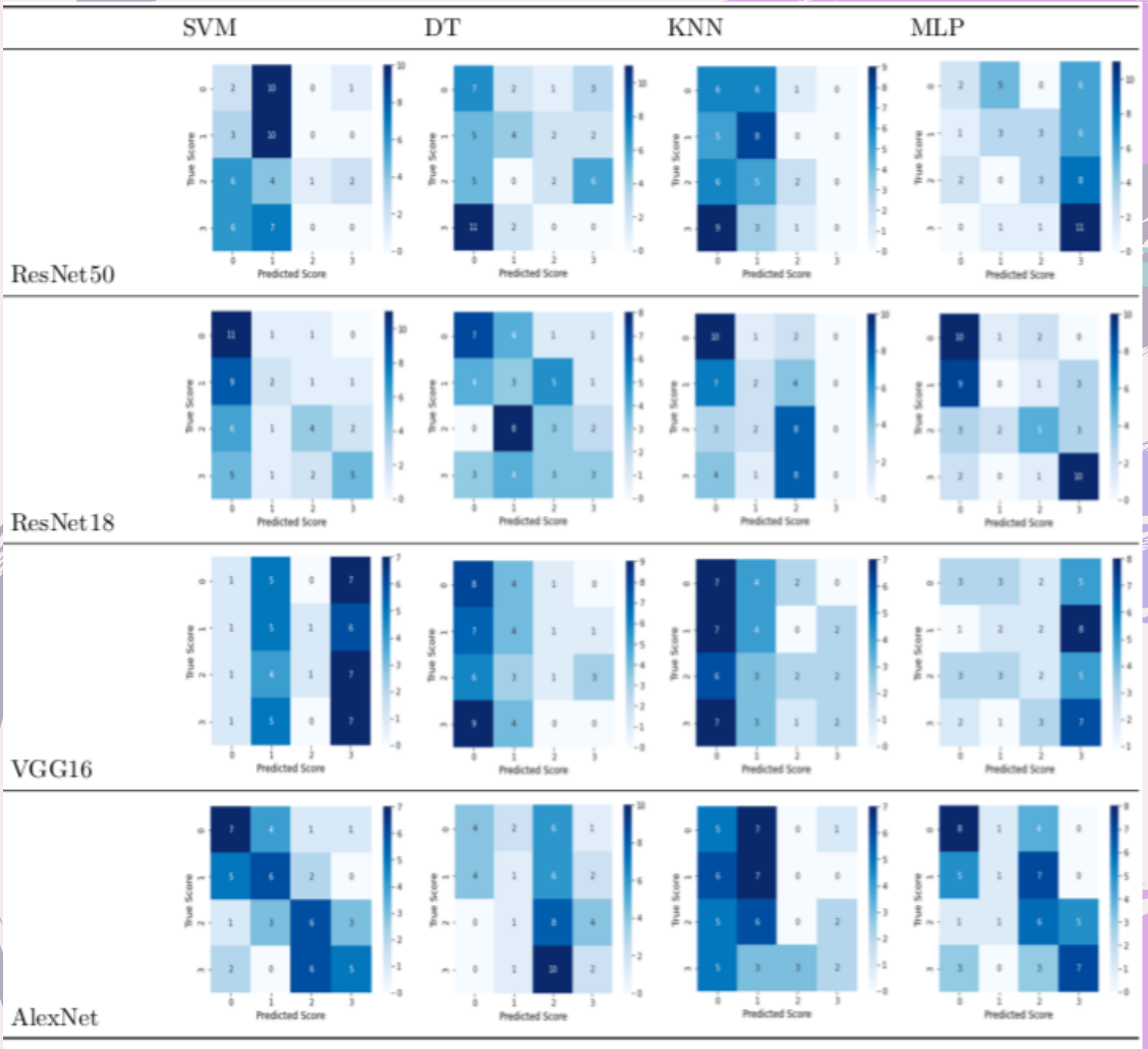
The Automatic Scoring of HER2 in Breast Cancer Tissues using Machine Learning Algorithms

Tabitha Lewis, College of Engineering and Physical Sciences

Breast cancer is the most common type of cancer in the UK, and when diagnosed with breast cancer, a patient's breast cancer tissue must undergo a test to score the amount of a protein called HER2 present. Currently, this test requires the extraction of breast cancer tissues through a biopsy, where a histopathologist will then undergo a visual examination of this tissue to provide a HER2 score. With inaccuracies of 20% in the past, this project explores automatic scoring to hopefully assist one day in breast cancer care. The photograph features results gathered through various approaches and compares the true score of a whole slide image to the predicted score obtained.

Frequency

	Word	Frequency	Per million tokens	% of conc.
1	such as	88		
2	due to	54	614.98	8.67 %
3	available to	54	377.38	5.32 %
4	pursuant to	51	377.38	5.32 %
5	full for	51	356.41	5.02 %
6	Subject to	51	356.41	5.02 %
7	more than	28	356.41	5.02 %
8	most of	14	195.68	2.76 %
9	Due to	13	97.84	1.38 %
10	less than	12	90.85	1.28 %
11	higher than	12	83.86	1.18 %
12	equal to	12	83.86	1.18 %
13	same as	10	83.86	1.18 %
14	similar to	9	69.88	0.99 %
15	lower than	9	62.90	0.89 %
16	high in	9	62.90	0.89 %
17	available in	9	62.90	0.89 %
18	present in	8	62.90	0.89 %
19	greater than	8	55.91	0.89 %
20	dependent on	8	55.91	0.79 %
21	more on			0.79 %
22	Most of			

English

cql [tag="J.*"][tag="IN"] 46,714 (7,461.84 per million)

quency

Word	Frequency	Per mill...
	4,488	
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due to	2,016	
available to	1,834	
pursuant to	1,8...	
full for		
Subject to		
more than		
many of		
responsible for		
similar to		
aware of		
Due to		
less than		
presen...		
ca...		

cql [tag="J.*"][tag="IN"] 1,015 (7,093.29 per million)

Concordance | Sketch Engine

Cantonese writers

as to for

|	Left context	KWIC	Right context
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Pattern Grammar & Corpus Linguistics

Zimin Xu, College of Arts and Law

My study is a corpus-based study that aims at finding the collocation errors in the adjective + preposition pattern of the English language in case of the ESL learners in Hong Kong to understand the differences of adjective + preposition collocation of the ESL learners' writings with that of the native English standards of writings by comparing the errors with analytical methods by utilizing SketchEngine to get the concordance so as to find the pattern of errors. The photo shows the target combinations in my study and one of its concordance, demonstrating how I analyse the data to answer the research questions in my study.
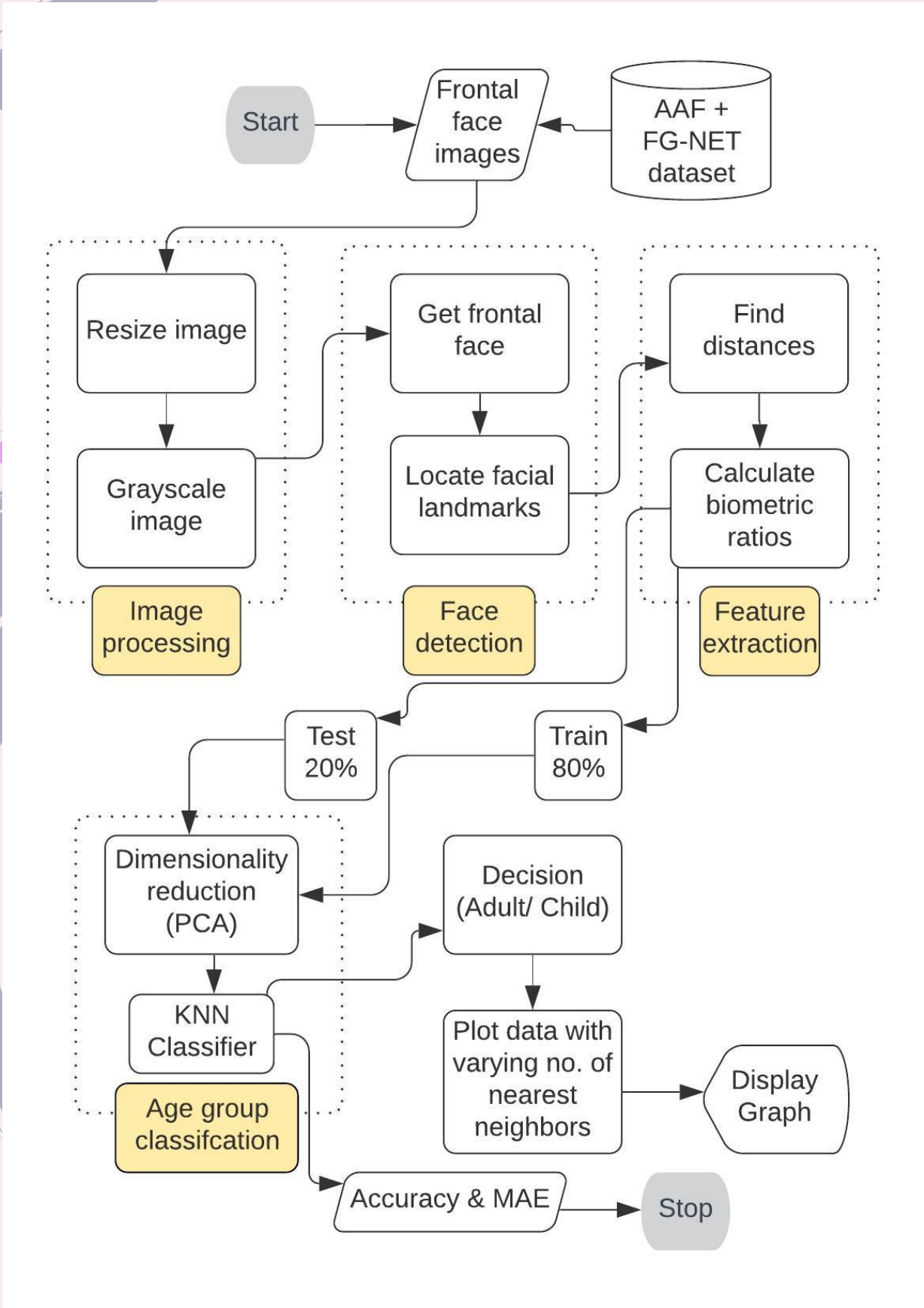
Age Estimation Detection System for Facial Images

Jeff David, College of Engineering and Physical Sciences

The proposed method consists of four main stages: image processing (image resizing and grayscale image), face detection, feature extraction and age group classification. The feature extraction was performed with an understanding of face variations by age in humans. The age group classification was evaluated using the K-Nearest Neighbor Classifier. The facial images are classified into two groups (Adult and Child) and the performance of the system is measured based on accuracy and mean absolute error (MAE) of experiments performed on a subset of the all-aged-faces and the face and gesture recognition research network datasets. The result show 91.14% accuracy & 0.089 MAE.

Animalfuturism: Black heroines and metamorphoses

Jasmin Kauldhar, College of Arts and Law

My research explores how contemporary black, female authors of science fiction and fantasy literature connect heroines to the animal realm. I highlight how each author uses animal metamorphosis to challenge the gender and racial oppression of black women throughout history. This image visualises the process of becoming animal, showing the blurred species boundaries that the authors describe. The heroines become intelligent and revered creatures such as dolphins and eagles to free themselves from the limitations of society and to find female power.

# MEDICALISED FEMALE GENITAL MUTILATION: THE REBIRTH OF AN ANCIENT TORTURE

Medicalised Female Genital Mutilation: The Rebirth of an Ancient Torture

Odirichi Andrew, College of Medical and Dental Sciences

Female genital mutilation (FGM) is an ancient practice performed by traditional cutters in unhygienic conditions. Unfortunately, there is a resurgence of FGM with 25% of it performed by health professionals, translating to 52 million medicalised FGM survivors worldwide. These females now live with childbirth problems, mental health issues and other consequences of FGM. FGM medicalisation remains a violation of human rights and goes against the medical oath. This study employs a research method with superior rank of evidence to investigate the global prevalence of medicalised FGM. My findings will serve as an objective guide to inform future FGM eradication policies.
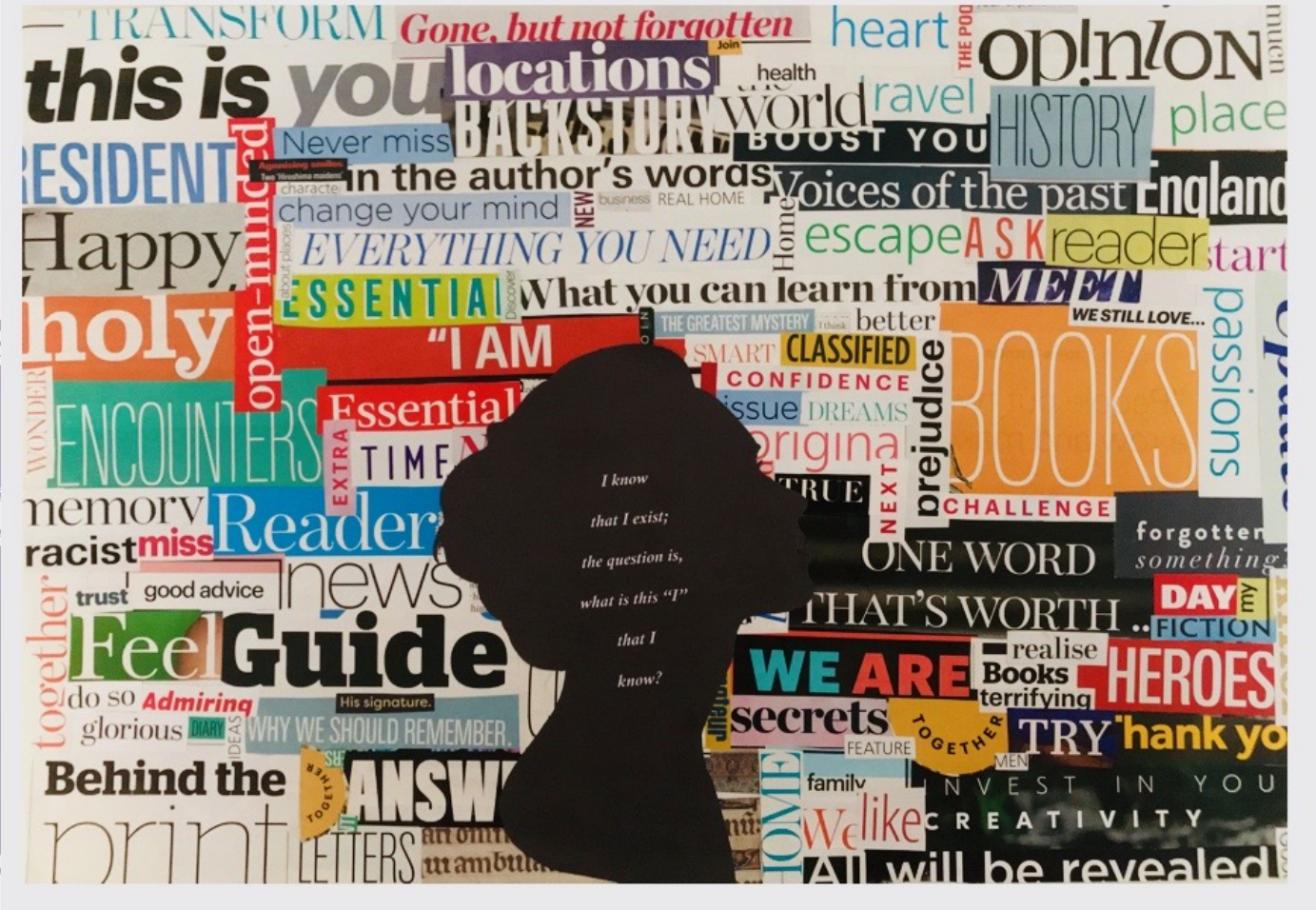
I know that I exist; the question is, what is this "I" that I know? – René Descartes

Charlotte Reid, College of Arts and Law

An image created by cutting small extracts from a number of magazines, newspapers, and books. A 'collage' is a final image made from an assemblage of different pieces, thus creating a new whole. This visually represents how identity is shaped by what we read and write. My MA dissertation explores how poetry allowed eighteen-century Romantics to understand and realise their self. Nothing is more complex and changeable than our identity – think of words such as 'happy' and 'sad', 'terrifying' and 'admirable', 'good' and 'bad' (all words found within the image). Each word we use to describe our self is made possible through literature that allows writers to discover their voice.
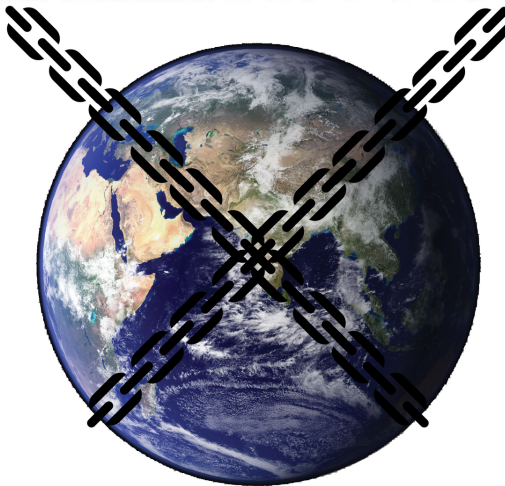
Does Unicode need to loosen up a bit?

Vincent Mach, College of Engineering and Physical Sciences

Do you remember those smiley faces? No not the McCain smiley faces! I'm talking about the ones inside your keyboard! They're extremely widespread and universally accepted on nearly every platform ☺. But where do they come from and who makes them? Well, the thing is, it's just up to a few people mainly from western technology companies. But who are they to say what should and shouldn't be a recognised character around the world? It hardly seems fair and how are they going to know what everybody wants to use and send? After all, even McCain doesn't dictate how we should eat our smileys.

Indonesia: Religious Nation in a Pluralistic Country

Farha Kamalia, College of Arts and Law

Islam is often questioned about its compatibility with democracy. Islam's notion of submission to God is often perplexing for some people. Muslims submit to the Islamic tenets and sharia in their daily life, however, it has been argued whether this should include political spheres, where some disagree against politicisation of any form of religion. My research presents how Islam has not hindered democracy in Indonesia, a Muslim majority country, despite its growing religious nationalism. This picture was taken during the funeral of the fourth President of Indonesia, Abdurrahman Wahid, who was a religious and pluralist figure that fought for democracy in Indonesia.

I listened hard. Nothing. The tumult of the wind, like a banshee, and the banging an
rattling of the window in its old, ill-fitting frame. Then yes, again, a cry, that familiar cr
of desperation and anguish, a cry for help from a child somewhere out on the marsh
There was no child. I knew that. How could there be? Yet how could I lie here and ignor
even the crying of some long-dead ghost? 'Rest in peace,' I thought, but this poor one di
not, could not. After a few moments I got up. I would go down int
the kitchen and make myself a drink, stir up the fire
little and sit beside it trying, trying to shut ou
that calling voice for which I could d
nothing, and no one ha
been able to d
anything for... hov
many years?
They had
come to a hal
when they
pas sed
the tree
be side
wh ich
the wom
an in
bla ck
was still
stan ding
and, as they
did so, she mo
ved qu ickly, her
skirts ru stling as
if to step into the
pony's path. The animal
swerved viol ently and then
reared a little, its eyes filled with
sudden fright, and then it took off and went
careering away through the glade between the tress,
whinnying and quite out of control. I began to run crazily and then I
heard it, the sickening crack and thud as the pony and its cart collided with one of the
huge tree trunks. And then silence - a terrible silence which can only have lasted
seconds, and seemed to last for years. They lifted Stella from the cart.Our baby son had
been thrown clear, clear against another tree. He lay crumpled on the grass below it,
dead.

Haunted Masculinities: The Male Experience of Fatherhood

Madelyn Essex, College of Arts and Law

The image provided, a photograph of father and child passed down the male line of my partner's family, exemplifies the core of my MA thesis. Susan Hill, through her neo-Victorian perspective adopted within her ghost fiction, rewrites the misguided stereotype that nineteenth-century fathers were absent, stoic and unemotional individuals. Hill reveals the private sphere of male fatherhood that has heretofore been hidden behind closed doors, much like this picture. The tragic irony, however, as detailed by the quotes which surround the photograph, is that due to supernatural intervention, Hill's male paternal protagonists are traumatically denied biological fatherhood.

Lest We Forget

'The Face of War': First World War Posthumous Portraits of Servicemen and Their Key Functions Within British Memorialisation Culture

April-Lina Waine, College of Arts and Law

Posthumous portraiture of servicemen was a revered artistic practice during and in the aftermath of the First World War. These were commissioned after the serviceman's death, based on a photographic portrait. Little art-historical scholarship has been dedicated to this genre. My dissertation explores the evolution of posthumous portraits into a hybrid of personal photos and military fine art portraits; their variations and functions within memorialisation culture; and what the genre reveals about the impact of war on gender roles. Overall, it challenges assumptions that the genre simply aided personal grieving processes by locating posthumous portraits as key memorials.

For more information about Images of Study, please contact Dr. Elizabeth O'Connor (E.R.OConnor@bham.ac.uk).

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