

# Errata

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This document lists errata for the dissertation titled “*Digital Systems for the MITRA*” submitted by Ruben Anderson Louis.

Location	Type	To be fixed
Pg. vi item 2.5	Missing word	Word "from", missing between " <i>source is offset</i> ", and " <i>the phase centre</i> ".
Pg. 3 Sec. 1.1 Par. 1 4 <sup>th</sup> row 2 <sup>nd</sup> sentence	Wrong word	Should be "Diffraction affects all types of", instead of " <i>Diffraction effects all types of</i> ".
Pg. 5 Sec. 1.2 Par. 2 7 <sup>th</sup> row	Missing words	Should be "E-W, and 4 other oriented" instead of " <i>E-W 4 other oriented</i> ".
Pg. 6 Sec. 1.4 Par. 1 2 <sup>nd</sup> row 2 <sup>nd</sup> sentence	Spelling	Misspelled word "concise" as " <i>consise</i> ".
Pg. 6 Sec. 1.4 Par. 1 6 <sup>th</sup> row 2 <sup>nd</sup> sentence	Missing word	Word "the", missing between " <i>is a discussion about</i> ", " <i>application of in GPGPU</i> ".
Pg. 7 Sec. 2.1 Par. 1 1 <sup>st</sup> row 1 <sup>st</sup> sentence	Superfluous word	" <i>which shows <del>an</del> incoming electromagnetic planar wavefronts</i> ".
Pg. 7 Sec. 2.1 Par. 1 2 <sup>th</sup> row 2 <sup>st</sup> sentence	Ambiguous spelling	author meaning "direction of the wavefronts", instead of " <i>direction of the wavefront</i> ".
Pg. 10 Sec. 2.1.1 Par. 1 Eq. 2.13	Serious typographical mistake	$V'(u, v, w) = \iint_{\text{sky patch}} A_N I(l, m) e^{-j2\pi(\mathbf{D}_\lambda \cdot (\hat{\mathbf{s}}_0 - \hat{\mathbf{s}}))} d\Omega$ <p>instead of the wrong eq. present as follows:</p> $V'(u, v, w) = \iint_{\text{sky patch}} A_N I(l, m) e^{-j2\pi(\mathbf{D}_\lambda \cdot \hat{\mathbf{s}})} d\Omega$

Pg. 11 Sec. 2.1.1 Par. 1 2.15	Serious typographical mistake	$(\sqrt{(1 - l^2 - m^2)} - 1) w \simeq -\frac{1}{2}(l^2 + m^2)w$ instead of the wrong square root terms present as follows: $(\sqrt{(1 - l^2 - m^2)} - 1) w \simeq -\frac{1}{2}(l^2 + m^2)w$
Pg. 12 Sec. 2.2 Par. 2 Fig. 2.5 label	Missing punctuation	Should be "Visibility function, source offset from the phase centre", instead of : "Visibility function source offset from the phase centre".
Pg. 15 Sec. 2.3 4 <sup>th</sup> row	Serious typographical mistake	$\frac{(ul+vm)}{\nu}$ instead of the wrong $n$ coordinate present as follows: $\frac{(ul+vn)}{\nu}$
Pg. 15 Sec. 2.3 5 <sup>th</sup> row	Wrong word	Should be "the path length is the <u>greatest</u> ", instead of " <i>the path length is the <u>greater</u></i> ".
Pg. 15 Sec. 2.3 Eq. 2.28	Serious typographical mistake	$r = \int_{-\infty}^{\infty} \int_{-\infty}^{\infty} I(l, m) A(l, m) e^{-j2\pi(lu+mv)} dldm \int_{-\infty}^{\infty}  H(\nu) ^2 d\nu$ instead of the exponential term as follows: $r = \int_{-\infty}^{\infty} \int_{-\infty}^{\infty} I(l, m) A(l, m) dldm \int_{-\infty}^{\infty}  H(\nu) ^2 \overline{e^{-j2\pi(lu+mv)}} d\nu$
Pg. 15 Sec. 2.3 Eq. 2.29	Serious typographical mistake	$A_0 V(u, v) \int_{-\infty}^{\infty}  H(\nu) ^2 d\nu$ instead of the exponential term as follows: $A_0 V(u, v) \int_{-\infty}^{\infty}  H(\nu) ^2 \overline{e^{-j2\pi(lu+mv)}} d\nu$
3 <sup>rd</sup> Par. at Pg. 15 Sec. 2.3, last sentence	Serious typographical mistake	Instead of "constant over a bandwidth, $\Delta\nu$ ", "constant over a bandwidth, $A_0$ ", has been written.
Last Par. at Pg. 15 Sec. 2.3, 1 <sup>st</sup> sentence	Serious typographical mistake	The (Jansky) unit should be " $\text{W m}^{-2} \text{Hz}^{-1}$ ", instead of " $\text{W m}^2 \text{Hz}^{-1}$ ".
Pg. 16, 1 <sup>st</sup> Par. Sec. 2.4.1, 3 <sup>rd</sup> row, 1 <sup>st</sup> sentence	Superfluous punctuation	(Thompson et al., 2008, Sec 8.7),.

Pg. 20 Sec. 3.2 Table 3.2, 1 <sup>st</sup> row, 3 <sup>rd</sup> column, 2 <sup>nd</sup> line	Typographical mistake	Should be "8903MHz" instead of "8903MHZ".
Pg. 20 Sec. 3.2 Table 3.2, 1 <sup>st</sup> row, 3 <sup>rd</sup> column, 2 <sup>nd</sup> line	Ambiguous indication	The range is indicated as 2333MHz - 8903MHz (8x8MHz bands) but actually it is not a continuous one there are only 8, 8MHz bands that are present from parts of this range in the dataset.
Pg. 20 Sec. 3.2 Table 3.2, 1 <sup>st</sup> row, 3 <sup>rd</sup> column, 3 <sup>rd</sup> line	Typographical mistake	Should be "observation" instead of "Observertation".
Pg. 20 Sec. 3.2 Table 3.2, 2 <sup>nd</sup> row, 3 <sup>rd</sup> column, 4 <sup>th</sup> & 5 <sup>th</sup> line	Typographical mistake	Should be "8441MHz", "8425MHz", instead of "8441MHZ", "8425MHZ".
Pg. 20 Sec. 3.2 Table 3.2, 2 <sup>nd</sup> row, 3 <sup>rd</sup> column, 5 <sup>th</sup> line	Typographical mistake	Should be "observation" instead of "Observertation".

Pg. 20 Sec. 3.2 Table 3.2, 3 <sup>rd</sup> row, 3 <sup>rd</sup> column, 2 <sup>nd</sup> line	Typographical mistake	Should be "8.2GHz" instead of "8.2GHZ".
Pg. 20 Sec. 3.2 Table 3.2, 3 <sup>rd</sup> row, 3 <sup>rd</sup> column, 2 <sup>nd</sup> line	Ambiguous indication	The range is indicated as 2.3GHz - 8.9GHz (16x16MHz bands) but actually it is not a continuous one there are only 16, 16MHz bands that are present from parts of this range in the dataset.
Pg. 20 Sec. 3.2 Table 3.2, 3 <sup>rd</sup> row, 3 <sup>rd</sup> column, 3 <sup>rd</sup> line	Typographical mistake	Should be "observation" instead of "Observertation".
Pg. 20 Sec. 3.2 Table 3.2, 4 <sup>th</sup> row, 3 <sup>rd</sup> column, 3 <sup>rd</sup> line	Typographical mistake	Should be "1674MHz" instead of "1674MHZ".
Pg. 20 Sec. 3.2 Table 3.2, 4 <sup>th</sup> row, 3 <sup>rd</sup> column, 4 <sup>th</sup> line	Typographical mistake	Should be "observation" instead of "Observertation".
Pg. 21 Sec. 3.2.1 4 <sup>th</sup> row, 2 <sup>nd</sup> sentence	Missing words	Should be "Inside the .vex files there are", instead of " <i>Inside the .vex are</i> ".
Pg. 21 Sec. 3.2.1 last Par. 3 <sup>rd</sup> row	Wrong order	Should be "as reference the run time of the single-core setup", instead of " <i>as reference the time run of the single-core setup</i> ".

Pg. 23, 2 <sup>nd</sup> row Sec. 3.2.1	Superfluous word	" <i>number of frequency channels</i> "
Pg. 24, 3 <sup>rd</sup> row Sec. 3.2.1	Grammatical	Should be "recent generation architecture, which <b>has</b> a greater" instead of "recent generation architecture, which <b>have</b> a greater".
Pg. 25, Sec. 3.2.2, 1 <sup>st</sup> Par., 3 <sup>rd</sup> row	Superfluous white space	"(_ baselines u, v, w coordinates)".
Pg. 26, Sec. 3.2.2, Fig. 3.14	Missing information	Should be "Power <b>and phase</b> spectrum" instead of "Power spectrum".
Pg. 27, Sec. 3.2.2, Fig. 3.15	Missing information	Should be "Power <b>and phase</b> spectrum" instead of "Power spectrum".
Pg. 28, Sec. 3.2.2, Fig. 3.16 (B)	Missing information	Should be "Power <b>and phase</b> spectrum" instead of "Power spectrum".
Pg. 29, 2 <sup>nd</sup> Par. Sec. 3.2.2, 1 <sup>st</sup> line	Missing word	Should be "that the LBA <b>format</b> consists of " instead of "that the LBA consists of".
Pg. 29, 2 <sup>nd</sup> Par. Sec. 3.2.2, Last line	Typographical mistake	Should be " <b>channels</b> " instead of "channels <b>y</b> ".
Pg. 30, 1 <sup>st</sup> Par. Sec. 3.2.2, 2 <sup>nd</sup> line	Missing word	Should be "found <b>to</b> be very similar" instead of "found be very similar".
Pg. 30, Sec. 3.2.2, Fig. 3.18	Missing information	Should be "Power <b>and phase</b> spectrum" instead of "Power spectrum".
Pg. 31, Sec. 3.2.2, Fig. 3.20	Missing information	Should be "Power <b>and phase</b> spectrum" instead of "Power spectrum".
Pg. 32, Sec. 3.2.2, Fig. 3.22	Missing information	Should be "Power <b>and phase</b> spectrum" instead of "Power spectrum".
Pg. 33, Sec. 3.2.2, Fig. 3.24	Missing information	Should be "Power <b>and phase</b> spectrum" instead of "Power spectrum".
Pg. 34, Sec. 3.2.2, Fig. 3.26	Missing information	Should be "Power <b>and phase</b> spectrum" instead of "Power spectrum".

Pg. 36, Sec. 3.2.2, Fig. 3.30	Missing information	Should be "Power <b>and phase</b> spectrum" instead of "Power spectrum".
Pg. 37, Sec. 3.2.2, Fig. 3.32	Missing information	Should be "Power <b>and phase</b> spectrum" instead of "Power spectrum".
Pg. 37, Sec. 3.2.2, Fig. 3.34	Missing information	Should be "Power <b>and phase</b> spectrum" instead of "Power spectrum".
Pg. 37, Sec. 3.2.2, Fig. 3.36	Missing information	There should be a text note specifying that the figure show the " <b>power and phase spectrum</b> ".
Pg. 40, Sec. 4.1, 1 <sup>st</sup> Par., 2 <sup>nd</sup> line	Grammatical	Should be "use of more processing <b>cores</b> scaled with performance increase" instead of "use of more processing core scaled with performance increase".
Pg. 41 Sec. 4.1.1 Par. 1 1 <sup>st</sup> line	Missing punctuation	Should be "allocated to hardware, related to data control" , instead of : "allocated to hardware related to data control".
Pg. 41 Sec. 4.1.1 Par. 1 2 <sup>st</sup> line	Missing punctuation	Should be "caching memory, and actually the processing units", instead of : "caching memory and actually the processing units".
Pg. 41 Sec. 4.1.1 Par. 1 3 <sup>rd</sup> line	Superfluous word	Should be "displayed in green known as the ALUs", instead of : "displayed in green <del>and</del> known as the ALUs".
Pg. 41 Sec. 4.1.1 Par. 1 4 <sup>th</sup> line, 2 <sup>nd</sup> sentence	Grammatical	Should be "logical reasons for both considerations", instead of : "logical reasons for both considerations".
Pg. 41 Sec. 4.1.1 Par. 1 4 <sup>th</sup> line, 2 <sup>nd</sup> sentence	Grammatical	Should be "logical reasons for both considerations", instead of : "logical reasons for both consideration".
Pg. 43 Sec. 4.1.1 Par. 1 8 <sup>th</sup> line	Grammatical	Should be "8- <b>cores</b> ", instead of : "8-core".
Pg. 44 Sec. 5.1 last line	Missing Word	Should be "low occupancy and <b>low</b> data transfer", instead of : "low occupancy and data transfer".

Pg. 49, Sec. A.3, 2 <sup>nd</sup> line	Syntactic	Should be "to calculate values for its plots, and the values of the plots also" instead of "to calculate values for its plots, and the plots values also".
Pg. 59, Sec. A.4, 2 <sup>nd</sup> Par., 1 <sup>st</sup> line	Grammatical	Should be "the value of the seed was stored in the same directory" instead of "the value of the seed was store in the same directory".