

# Words for 3-D Vision

Nie Shicong

April 1, 2020

# Contents

Linear Algebra Done Right	1
1 Chapter 2 & Chapter 3	3
2 Chapter 4	4
MVG Lecture 8, 9, 10	5
3 Chapter 5	6
4 Chapter 8	7
5 Direct approaches for Visual SLAM	8
6 Chapter 11	8
7 Review	10
8 Introduction to Linear Algebra	10
9 Toefl Listening	11
10 Miscellaneous	14
11 slam	33

## Linear Algebra Done Right

audacious  
torturous  
banish  
make up for ...  
in a fasion  
genuine / formal  
, due to the next class  
without charge  
I'm no longer around

first brush  
immerse yourself in ...  
an emphasize on attaining ...  
zip through a page  
on your part  
ponder  
internalize  
without regard to ...  
owe a debt  
heritage  
antiquity  
Bestowing proper credit on ...  
undertake  
In no case should ...  
dispense with  
clutter  
vague  
as rigorously defined as  
philosophy  
lurk  
proposition  
corollary  
once and for all  
be enlarged with  
triplet  
transport  
paralelepiped  
Roughly speaking, ...  
anticipate  
derive / derivation  
refer to ... as ...  
instantaneous / spontaneous  
be doomed to ...

# 1 Chapter 2 & Chapter 3

rudiment / rudimentary

In a broad figurative sense

frescoe

mosaic

landscape

It's no coincidence

proficient

matter

vibrant

compelling

rather sophisticated

indicative

portray

graph

irradiance

by no means trivial

diffraction / refraction / reflection

germane

we can argue with

emit

cone

negligible

undeflected

upside down

subtend

radiance flux

consist in ...

compensate

...outlined above

...thus obtained

articulate / articulation

aberration

counterpart

## 2 Chapter 4

reconcile  
at the outset  
moreover  
discern / discernible  
presumably  
photom  
discrepancy  
corrupt  
manifestation  
counteract  
envision  
opaque  
suggestive  
cardinality  
count on ...  
conceive  
rephrase  
lend itself to ...  
lump  
departure  
scatter  
ambient  
translucent  
anisotropic  
commonplace  
hint  
How do we proceed ?  
ill / well posed  
an abuse of notation  
tilde / wiggle  
identical  
more diagonally  
moderate  
nonuniform  
, irrespective of ...  
...made of ...

regard ... as ...  
decent  
curvature  
marble  
distinctive  
elucidate  
extended  
qualitative / quantitative  
diffuse  
warp  
substantial  
prune (out)  
pyramid  
jerk  
whilst  
shearing  
field  
even if  
chameleon  
specularity / specular  
among other things  
mega  
heuristic / heuristics  
discriminate / discriminative  
mannequin  
dummy  
doable  
stroboscope  
agenda  
alternate among / between  
side benefit / effect

## **MVG Lecture 8, 9, 10**

fascinating  
pursue

schematic  
involved  
suboptimal  
haunt  
recipe  
reasoning  
inference  
pathological  
chances are that ...  
reminiscent of ...  
...mingled with ...  
derive / derived / derivation  
bombastic

### 3 Chapter 5

unveil  
photogrammetry  
Without loss of generality / continuity  
characterization  
sufficiency / necessity  
draw attention to the case that ...  
three out of the four ...  
parallax  
exercise caution to ...  
be of more significance for ...  
bury  
uncontroversial  
universally accepted  
probable / improbable  
When combined with, ...  
In what follows, ...  
oversight  
In the remainder of ...  
multimodal  
optimality

## 4 Chapter 8

panoramic / panorama

at most

taxonomy

gross errors

pertain to

thesaurus

suspicion

be promoted by ...

quadrilinear

annihilate

quadruple

clarify / clarity / for clarity

rectilinear

glimpse

perturb

synthesis

concave

crank up

isoline

asymptotic

be inferior to

zig-zag

contract

paraboloid

provided (that)

in this regime

revert to

profit from

extremality / extremity

quasi

damp

overlook

be (all) set to go



silhouette  
contour  
a whole lot  
monocular  
footage  
circumvent

## 5 Direct approaches for Visual SLAM

invariably  
devastate  
deteriorate  
degrade  
nuisance  
sideways  
close by  
soap films  
in-between  
revision  
residuum / residual  
voxel  
more or less  
alleviate

## 6 Chapter 11

multifaceted  
irregular  
polygonal  
so as to ...  
convolve  
forcibly  
suppress  
tile

disparate  
elaborate  
contrast  
sawtooth  
aliasing  
sinusoidal / sinusoid  
convey  
transmission  
adequate  
waveform  
ego-motion / ego / egoistic / egoistical  
primitive  
multiscale  
superpose  
be similar in spirit to ...  
compromise  
macroscopic  
rationale  
caveat  
radically  
forego  
laden  
be reputed to ...  
putative  
orphan  
underlying  
be free of ...  
handful of ...  
render sth. be  
settle for sth.  
set up  
two orders of magnitude  
uneven  
play with ...  
in place of ...  
extrapolate  
convex hull  
carve

tetrahedra  
prism  
arch  
surfaces of revolution  
bookkeeping  
entail

## 7 Review

long known  
indispensable  
rational / rational number  
quotient

## 8 Introduction to Linear Algebra

all-important / vitally important / crucial  
hammer away at the difference between ... and ...  
... back off from ...  
seesaw / teeterboard  
spreadsheet  
This is more than ...  
at once / at the same time  
stand for ...  
either way  
humble  
fall into place  
The odds are ...  
basic facts  
regard ... as ...  
common sense  
magician  
sweep  
provision

subroutine  
abnormal

## 9 Toefl Listening

folk / fairy tale  
act out  
narrate  
props  
scenery  
be disillusioned with  
be grappling with  
symbolize  
seemingly  
unsolvable  
turmoil  
bare  
... be a departure from ...  
make us see  
be swept up  
I'd love / like to ...  
... be the same ... as ...  
the significance difference is with ...  
costume  
... be teeming with ...  
organism  
... get as much popular attention as ...  
whale  
microscopic  
algae  
... aren't as exciting  
bulk, bulk of ...  
plankton  
fresh water  
mystery  
not the way birds do

must  
commute / commuting  
stimulus / stimuli  
sun's rays  
barely  
penetrate  
away from  
sunlight  
head back toward ...  
illuminate  
expend  
predator / predator avoidance  
Make sense, doesn't it ?  
But what do we do with ...?  
at great depth  
light up  
bioluminescent  
despite all these  
by sight  
presence and absence  
prey / prey on  
ultra-violet  
conserve  
feeding  
digest  
archaeology  
go out into the field  
shovel  
an array of  
inter-disciplinary / multi-disciplinary  
muon  
...result from ...  
subatomic  
start over  
basically  
proton  
zip through  
outer space

be critical for ...  
be closely based on ...  
occasionally  
hardly ever ... anymore  
originally  
controversial  
filmmaker  
purity  
over time  
orchestra  
if wanted  
drum, rolling of drums  
... or whatever  
But that wasn't as common  
..., the ones concerned about  
Trouble is(was), ...  
the luster wears off  
commerce  
was it ever ?  
the commercial types  
now that ...  
visual medium  
stage  
straight adaptations from ...  
since ...  
all they pretty much did was ...  
on the mark  
nonsynchronous  
expressive  
have experience with ...  
live radio  
technician  
... that makes sense to them  
less obvious  
Anyway, ...  
look at this in various ways  
radical  
advocate

a bit of an exaggeration  
What meant to say was ...  
making money  
proliferate / proliferation

## 10 Miscellaneous

striving / strive  
grand goals  
core mission  
non-profit  
fuel ...  
openly  
sponsor  
editorial publications  
across the world  
workshop  
panel / panelist  
webinar  
mailing-list  
newsletter  
disseminate  
more collaborative / inclusive  
have sb. on-board  
curate  
advisory board  
enthusiast  
at scale  
alchemist  
predictive maintenance  
schedule a meeting / call  
quota  
coffee break  
poster  
interface a new problem with ...  
peer, peer review, peer pressure  
be articulated in two phases

announce / announcement  
adherence to ... / adherent  
final aggregation score  
ever more  
exclusively focus on ...  
memory overhead  
take / draw inspiration from ...  
disentangle  
a surge of  
mediate, be mediated by ...  
neurocognitive  
sensorimotor  
remain a long-standing challenge for ...  
...factor in ...  
curriculum  
progressively / progressive  
over long time spans  
interfere with ...  
abrupt / abruptly  
excel = be master of ... / excel at ...  
a batch of  
pragmatic pragmatically  
hinder  
methodology  
developmental  
in scenarios of ...  
timely  
refine / refinement  
on the basis of ...  
mammal / mammalian  
throughout the lifespan  
contingency  
sustainable / sustainability  
sustained = continuous  
neurophysiological / neurophysiology  
visiting student  
eligible  
democratic / democracy



... be made possible with / by ...  
consultant  
lineup  
given  
on a daily basis / on a regular basis  
cutting edge  
underway  
initiative  
hub of information  
didactic  
avalanche  
with ... in mind  
value ...  
showcasing  
venue  
cause  
bibliography / bibliographic  
hiccup  
antithetical  
antipodal  
utterly  
nerve ...  
bombard / be bombarded with ...  
arrange = lay out  
as originally conceived  
living creatures  
be adept with ...  
repurpose  
in some ad hoc way  
dispute  
in any case  
self-imposed  
submarine  
harness the power  
towards its own purposes  
steer  
accrue  
brilliant, a brilliant idea

metaphor  
corollary  
teleoperation  
rebel / rebellion  
be constantly changing / evolving  
regularity  
a rough idea  
string  
transpire  
unfold  
at its own pace  
prose  
sensible  
unorthodox  
peg, pegged to ...  
entrust  
probe  
waterfall  
definitive  
cascade  
tailor, be tailored to ...  
diploma  
cohort, a diverse cohort of ...  
attest / attested  
defer  
transcript  
comparable  
proficiency / proficient  
postsecondary  
ivy  
a huge time commitment  
rigorous  
embark  
accredit / accredited  
phenomenal  
in no way  
disrupt / disruption  
breadth

demonstrated leadership  
deposit  
flush  
await / be awaiting  
turtle / tortoise  
carnivorous / herbivores  
imperative  
pervasive  
scavenge / scavenger  
refrain from ...  
scarcity of ...  
sensitization  
habituation  
exposure  
a well lit room  
reciprocal  
retreat into ...  
secrete  
ion  
astounding  
finer  
acuity  
causal / casual  
differentiate  
conditioning  
be made famous by ...  
saliva / salivate  
..., as such in the example of ...  
cattle  
deter ... from ...  
in the wild  
uncover  
inhibit / inhibition  
octopus  
jar  
crab  
... trapped inside  
hint at ...

... be paired with ...  
fade away / out  
renewed  
embrace  
malleability  
regulate  
compensatory  
homeostatic  
hippocampus  
neocortex  
human subject research  
the vast majority of ...  
modality-specific  
ecological  
multisensory  
embody  
in one's infancy / infant  
stepping stone  
ad-hoc  
astonishing  
assimilate  
rehabilitate / rehabilitation center  
modulate  
overarching  
predominant / prominent  
profile  
grant  
seminal work / seminal fluid  
ocular  
newborn  
kitten  
deprivation  
... be characterized by ...  
... with the aim to ...  
comprise  
replicate / replica / replicant  
neuroscience  
finding

preferential  
transient  
amend  
be contingent on ...  
should / if  
usher  
interleaved  
in favor of ...  
graceful  
richness  
long-standing  
mitigate / alleviate  
... to make sense of ...  
be immersed in ...  
spatio-temporal  
make massive use of ...  
reservoir  
opt, opt to  
plastic / elastic  
embed / embedded  
intractable  
surrogate / surrogate mother  
mutable / mutation  
... in response to ...  
accommodate  
enforce  
vanilla  
resemble  
plausible  
habituate to ... / habituated  
these results reinforce that ...  
... be accounted for  
interplay  
episodic  
rehearsal  
cause-effect  
ambiguous  
revise

spontaneously  
 a wealth of ...  
 crossmodal  
 schematic / schematic view  
 valuable  
 intricate  
 dictate / be dictated by ...  
 staged  
 bootstrap  
 tutor / tutoring  
 unveil  
 disclose, disclose the cause  
 bilateral  
 innate  
 deceptive / deception  
 scaffold  
 exogenous / endogenous  
 be congruent with / congruency / congruent triangle  
 perceptual  
 bind  
 causal inference  
 stationary  
 disregard  
 radically  
 over the course of millions of years  
 underpin  
 evolutionary  
 in-silico  
 As a consequence = Consequently  
 inspiration has originated more strongly from ...  
 acronym  
 genetic  
 ... take place as ...  
 ambitious  
 ... derived from ...  
 arguably  
 set the stage for ...  
 a remarkable increase in ...

dedicated  
...than in the past  
resonate with the readers / resonate  
touch upon  
in the remainder of ...  
with the intent / intention to ...  
make-up  
manifest / manifestation  
blueprint  
zygote  
nurture  
cultivate  
be now more aware of ...  
highlight the importance of ...  
deceive  
make no pretence of ...  
diversity and inclusion  
open-ended / open-endedness / open-ended questions  
pathway  
an alternative to ...  
empower  
synergy / synergy effect / in synergy  
statics / dynamics  
conductive / be conducive to ...  
reside  
delegate  
foster  
cope with ...  
genotype  
aspiration  
resurgence  
synopsis  
speculation  
pillar  
In essence = Essentially  
...in light of ...  
bloom  
around 2019

shift  
It's not after long that ...  
bet on ...  
masterfully  
expertise  
neat  
be indebted to sb. for sth.  
pickle  
customary / customarily  
brevity / clarity  
wit  
perturbation  
mastery  
neglect  
performant  
ingest  
comply with ...  
trademark  
aforementioned  
malformed  
blob  
glob  
a patient is admitted to the hospital  
administer drug  
concerned  
relative  
a sick thought  
not uniformly understood  
moderately  
be wrong in ...  
subjective belief  
a rational person  
conscious, make conscious use of ...  
inner-held  
... be judged to ...  
dwell (further) on ...  
philosophical issues  
strike a balance



outgrowth, an outgrowth of ...  
involvement in sth.  
attend a course  
span the entire spectrum  
Accordingly, ...  
In this spirit, ...  
sketch  
otherwise  
stand in the way of ...  
attentive  
conditioning  
omit / omission  
recitation  
elsewhere  
simplicity in exposition and sophistication in analytical reasoning  
a rich set of ...  
go into debt / be in debt  
acknowledge  
be thankful to ...  
Last but not least, ...  
take sth. (it) as a given (that ...)  
a short review about ...  
antiquity  
at the outset  
toss, a coin toss  
a die roll  
conceivable / conceivably  
excerpt  
in accordance with ...  
collective  
immediately obvious  
underlying  
Strictly speaking, ...  
pathological  
dart, throw a dart  
qualify  
constitute  
successive

identify  
namely  
downstream, ... downstream from ...  
For example; As another example  
Proceeding similarly, ...  
predede, preceding  
settle on ...  
by necessity  
counterpart  
... differ from ... in that ...  
spin  
... hinge on the fact that ...  
incidentally  
legitimate / legitimacy  
tractable / intractable  
Invariably though, ...  
inscribe / inscribed  
equilateral triangle  
millennium  
game of chance  
touch upon  
lay a / the foundation for ...  
raise the standard  
rigor / rigorous  
influential  
axiom / axiomatic  
pervasive / pervasively  
... in conjunction with ...  
traverse / traversal  
be inferior to ...  
a much discussed problem  
stick to / adhere to / insist on  
under this strategy  
celebrated  
... amount to ...  
malignant / benign tumor  
a common first thought  
aircraft

...state that ...  
In words, ...  
subsystem  
subinterval  
...consist in turn of ...  
populate, be populated with ...  
dial up  
modem  
the probability of interest  
facility  
facilitate  
combinatorics  
in principle  
thought  
a large portion of ...  
desired  
consecutive / contiguous  
cardinality  
algebraic identity  
instrument / instrumental, instrument readings  
two raised to the fifth power = two to the fifth  
a notion of  
associate with sth. sth.  
focus exclusively on ...  
qualifier  
a lot of new ground  
the general line of development  
genuine / genuinely, genuinely new  
give rise to a value  
In what follows, ...  
...in place of ...  
throughout  
conceptually straightforward  
range over ...  
By a similar argument, ...  
...is through ...  
characterize  
be either for or against ...

For all its simplicity, ...  
...be sketched in the section 3  
Note that here and elsewhere, ...  
the coin comes up a head with probability  $p$   
prior  
refer to ... as ...  
..., specialized to ...  
come up for the first time  
be monotonically decreasing with ...  
misspell  
typo  
...be well modeled with ...  
justification  
It is often desirable to ...  
monetary reward  
...in proportion to ...  
a weighted average of ...  
As motivation, ...  
anticipate  
roughly equal to ...  
dispersion  
pitfall  
It is not generally true that ...  
at a speed of ...  
...is obtained by nothing that ...  
prototype / prototypical  
attempt, attempt to  
coercible  
resist  
be evolving  
I'm still not done learning  
set up a structure for ...  
...as I see it  
elaborate upon ...  
groundwork  
one thing that initially surprised me was ...  
...come into play  
There is no one right way to ...

methodical / methodically  
linguistics  
field of study  
rhythm / melody  
keen  
modular mind  
vocal, vocal awareness  
chunk  
first-hand  
unconventional  
intonation  
stick  
clap  
consonance / dissonance  
palate  
most of the time  
muscle / muscular  
youngster  
stick out / stick way out  
dark is drawing in  
cavity  
nasal  
to name a few  
look up ...  
make sb. sure  
check out ...  
go over ...  
due to a difference of opinion  
homophone  
make a phone (call)  
repeat out loud / practice out loud  
drill ...  
you won't transform overnight  
dedicated, be dedicated to ...  
singleton  
bisect / bisection  
timezone  
polaris

anagram  
palindrome  
congestion  
pertain, pertain to ... = belong to ...  
universe  
In the same spirit, ...  
be destined to ...  
... argues in favor of ...  
regardless of ...  
flaw / flawed  
to some extent  
paradox / paradoxical  
scrutinize  
a great deal of information  
Roughly speaking, ...  
devil / devilish  
quirk / quirky  
testament  
a general agreement between intuition and what is mathematically correct  
... extends naturally to the case of ...  
imperative  
dialog  
weave / weaver, be woven into ...  
restraint  
budget  
Over the past three decades or so, ...  
purgeable  
bump  
synergy  
affordance  
induce  
worthwhile  
As machine learning is maturing, ...  
formalism  
toy / non-toy problem  
plague, be plagued by ...  
reinvention  
induction / inductive

speedometer  
insightful  
... be called for  
In any case, ...  
cf. = confer  
Graphically, ...  
gambler  
anticipate / anticipated  
for the time being  
light bulb  
burn out  
elapse  
meteorite  
Sahara desert  
..., be it through ... / Be it through ...  
staircase form  
line of argument  
a case in point  
in point of ...  
Loosely speaking, ...  
snowfall  
celebrate / celebration / celebrated  
conclude  
corrupt  
... parallel ...  
In complete analogy with ...  
vicinity  
needless to say = It goes without saying that ...  
needle  
mark the origin of ...  
a surface is ruled with lines  
line segment  
acute angle / obtuse angle  
midpoint  
justify  
the remaining time up to completion  
metro (train)  
metropolitan

board the train  
be analogous to ... / in analogy to ... / an analog of ...  
... carry over to the present context  
schematic  
It suffices to ...  
The converse of this statement is also true  
stencil / template  
chromosome  
bilingual  
in a row, 7 days in a row  
versatile / versatility  
variability  
interlinked  
in the vicinity  
but they still can't rival homo sapiens for complexity  
proposition  
be agnostic to ...  
they can be advantageously combined  
better off, better off alone / better off without ...  
nuisance, nuisance variable  
latent variable  
preclude  
resort to  
causality  
neat / neatly  
punctuation marks  
unleash  
I find them severely wanting in abilities  
arsenal  
divulge  
ideology  
triumph  
..., but that wasn't always the case  
proceed in chronological order  
hype  
extravagant  
publicity stunt  
clip



cardinality  
a means to an end  
It's almost exclusively used for visualization  
By itself this isn't very useful, but ...  
genre  
be akin to ...  
induce  
spark a great deal of interests  
lately = recently  
In the past this was all but impossible, ...  
in complex learning regime  
endorse / endorser / endorsement  
amortize / amortization  
resume membership  
intra- / inner-  
episode / episodic  
hallucinate  
assortative  
resilience  
discriminate between ...  
confine, be confined to ...  
a multitude of ...  
...outperform ... by a significant margin  
...be nigh  
grace / graceful / gracefully  
a gentle introduction  
clarify the relationship between ...  
myth = a commonly believed but false idea  
cont. = continued  
synthesis / synthesize  
digest  
compositionality = hierarchy  
coefficient and intercept  
mainstream models  
an emerging line of work  
cast ... as ...  
In the same vein = In the same style of speaking or writing  
attenuate = weaken

alleviate  
meliorate its effects  
rife, be rife in ...  
discriminate specific tasks  
conceived  
mitigate, mitigate the risks  
commonality  
the unified definition of ...  
backbone  
acyclic graph  
thesaurus  
proactive  
lockdown

## 11 slam

make it free of noise  
prolific  
propeller  
proximity  
sloppy  
rail  
it deviated from its path  
diameter  
get drift to one side  
by-product  
azimuth  
lawn mower  
compromise  
surveillance  
reef  
reefer  
archaeology / archaeologist  
ceiling  
infrared  
showcase

conduct the project  
 proximity, proximity sensor  
 joystick  
 revolution, revolution of the wheels  
 ...same holds for ...  
 sketch, a sketch of ...  
 successive iterative process  
 it happens from time to time  
 ...prevail in the domain of ...  
 volumetric representation  
 there is no way around ...  
 geodesy  
 acronym  
 coin / coined  
 ...thus far comprise in-depth thoroughly central topic exclusively exogenous  
 amenable, be amenable to ...exposition contemporary ...is by no means to  
 be ...Rather, ...descriptive not infeasible Such extensions, ...characterize  
 ...appear, may appear to ...provision in the first place vastly overestimate  
 accommodate certain tasks postulate whereabouts, the whereabouts of peo-  
 ple accrue .....as indicated This chapter provides in detail ...projectile  
 ...concerned with ...a comprehensive introduction into / to ...subfield  
 monograph overarching temporal / spatial extension commonality discourse  
 insofar, insofar as ...= to the degree that ...wordy laborious at times  
 ...emerge with ...superficial exposition planetary be in one's infancy in the  
 proximity of ...First and foremost, ...perturb / perturbation heavy-duty  
 wear-and-tear flaky rather crude realm stumble / stumbling pay tributes to  
 ...Put differently, ...ambiguity degree of belief in the face of ...graceful  
 / gracefully pertain, ...pertaining to ...distinguishable / indistinguishable  
 plausible by no means does ...momentary err deprive paramount coastal an-  
 ticipate / anticipation cut across reactive / proactive relieve insurmountable  
 sole sound ...come at a price weak link unprecedented bargain, at bargain  
 prices branch into / out self-explanatory pitfall set forth, ...set forth below  
 virtually familiarize ...predominant / predominantly brevity, ...lies in its  
 brevity coincide / coincidence a final concept of importance stray ..., so as  
 to ...